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BIBLIOGRAPHY OF EXTRATERRESTRIAL RESEARCH

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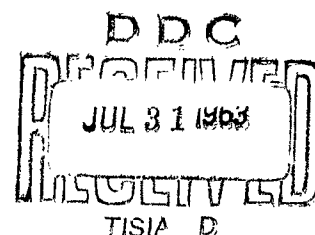
Robert W. Henny  
Lt USAF

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Research and Technology Division  
Air Force Systems Command  
AIR FORCE WEAPONS LABORATORY  
Kirtland Air Force Base  
New Mexico

Project 1080



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## FOREWORD

Although there are a number of bibliographies on extraterrestrial research in existence, most are limited in scope either by being slanted toward a specific area of interest or restricted to research occurring during a particular time period. The purpose of this bibliography is to provide a reference source on all extraterrestrial research pertinent to planetary exploration, scientific investigation, and base construction, and to include all known references in these and related subject areas. (Categories II, V, IX, XI, and XIII, however, include only those articles of a general or summary nature.)

To handle such a momentous task, all the listings are punched on IBM cards and are then automatically categorized, alphabetized, and printed, utilizing AFSWC's CDC 1604 Digital Computer. It is intended that this first edition provide a foundation for succeeding editions. This edition is therefore a preliminary compilation of references; it is neither complete nor specialized for any of the categories or for any particular time interval.

This bibliography contains no government contract reports; however, a classified bibliography containing such entries is now in the compilation stage, while unclassified contract reports will be included in the next edition. Further, it will be noted that no single entry appears in more than one category; this will be partially modified in the next edition.

Entries in each category are alphabetized and cross-indexed. Where more than one article appears for any one author, such are listed in order of dates published. Astia Document numbers are indicated by prefixing the letters "AD".

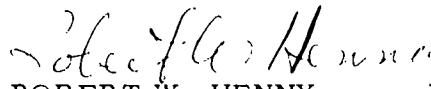
The author wishes to gratefully acknowledge the assistance of Betty Lou Cantrall for the many tedious hours spent in typing the final mats.


ABSTRACT

This bibliography on extraterrestrial research is subdivided into the following categories: Astrobiology; Astronomy and Cosmology; Cratering Phenomena; Extraterrestrial Matter; Materials; Meteoritic Cratering; Moon (Atlases & Photography, Configuration, Experimental Research, Exploration and Basing Concepts, Lunar -- Earth Phenomena, Lunar Trajectories, Surface Materials, and Topographical Features); Planets; Power Systems; Space Vehicles & Probes; Tektites; and Vacuum Environmental Simulation. Each category is separately alphabetized and cross-indexed. Where more than one article appears for any one author, such are listed in order of dates published.

PUBLICATION REVIEW

This report has been reviewed and is approved.

  
ROBERT W. HENNY  
Lt USAF  
Project Officer

  
THOMAS J. LOWRY, JR.  
Colonel USAF  
Chief, Structures Branch

  
PERRY L. HUIE  
Colonel USAF  
Chief, Research Division

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## I. ASTROBIOLOGY

Adeline and Gilbert, "Use of Plants for the Regeneration of Oxygen From Carbon Dioxide", *Fusees et Recherche Aeron.*, V. 12, No. 3, Mar. 1957, p. 69-74, (French).

Anders, E., "The Moon as a Collector of Biological Material", *Science*, V. 133, 1961, p. 1115-1116.

Anonymous, "Algae Hazard Found Facing Space Travel", *Aviation Week*, V. 67, Sept. 1957, p. 65.

Calvin, M., "Origin of Life on Earth and Elsewhere", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 6, 1959, p. 8-18.

Connor, J. A., "Aerospace Nuclear Safety", *Aerospace Medicine*, V. 31, Oct. 1960, p. 797-806.

Groth, W. E., and Weyssenhoff, H., "Photochemical Formation of Organic Compounds from Mixtures of Simple Gases", *Planetary and Space Science*, V. 2, 1960, p. 79-85.

Horowitz, N. H. (Chairman), "Astrobiology Session", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 2, No. 1, 1959, p. 2-14.

Lindberg, R. G., "Biomedical Research in Space", *SAE-AFOSR, Astronautic Symposium*, Los Angeles, California, Oct. 12-14, 1960, Preprint 230J, 4 pp.

Sagan, C., "Indigenous Organic Matter on the Moon", *National Academy of Sciences. Proceedings*, V. 46, 1960, p. 393-395.

Strughold, H., "Advances in Astrobiology", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 6, 1959, p. 1-7.

Strughold, H., "A Introduction to Astrobiology", *Astronautics*, V. 5, No. 12, 1960, p. 20-21 and 90.

Weyssenhoff, H., (see Groth, W. E., 1960).

, "Proceedings of Meeting on Problems and Techniques Associated With the Decontamination and Sterilization of Spacecraft", *NASA TN D-771*, Jan. 1961, 57 pp.

## II. ASTRONOMY AND COSMOLOGY

Allen, C. W., "Astrophysical Quantities", John De Graeff, New York, 1955, 263 pp.

Baker, R. L., "Astrodynamics", Space Trajectories, A Symposium Sponsored by the American Astronautical Society, The Advanced Research Projects Agency, and Radiation Incorporated, Orlando, Florida, Dec. 14-15, 1959, New York, Academic Press, 1960, p. 29-68.

Banerji, A. C., "The Origin of the Solar System", Science and Culture, V. 10, No. 8, 1945, p. 317-323.

Bracewell, (see Senior, T. A., 1959).

Briggs, M. H., "Origin of the Solar System", Nature, V. 187, 1960, p. 1102-1103.

Brouwer, D., and Clemence, G. M., "Methods of Celestial Mechanics - Radar Echoes From Meteors", IRE Proceedings, V. 37, 1949, p. 364-375.

Brown, H., "The Origin of the Planets", Chemical Engineering News, V. 30, 1952, p. 1622-1626.

Cameron, A. W., "The Origin of the Solar System", Problems Related to Interplanetary Matter, National Academy of Science, National Research Council, Publication 845, 1961, p. 1-8.

Clemence, G. M., (see Brouwer, D., 1949).

Eggleton, R. E., (see Shoemaker, E. M., 1961).

Egyed, L., "Diracs Cosmology and the Origin of the Solar System", Nature, V. 186, 1960, p. 621-622.

Fowler, W. A., Greenstein, J. L., and Hoyle, F., "Nuclear History of the Solar System", Astronomical Society of the Pacific. Publications, V. 73, 1961, p. 326.

Giacconi, R., and Rossi, B., "A Telescope for Soft X-ray Astronomy", Journal of Geophysical Research, V. 65, 1960, p. 773-775.

Gibson, J. E., and McEwan, R. J., "Paris Symposium on Radio Astronomy", Edited by R. N. Bracewell, Stanford University Press, 1959, p. 50.

Greenstein, J. L., (see Fowler, W. A., 1961).

Hackman, R. J., (see Shoemaker, E. M., 1961).

Herbig, G. H., and Worley, C. E., "Some Basic Astronomical Data", Astronomical Society of the Pacific. Leaflet 325, 1956.

Herrick, S. (Chairman), "Astronomy Session", Lunar and Planetary Exploration Colloquium. Proceedings, V. 2, No. 1, 1959, p. 34-48.

Hoyle, F., (see Fowler, W. A., 1961).

Hoyle, F., "Frontiers of Astronomy", Harper, New York, 1955.

Jeans, J. H., "Astronomy and Cosmogony", Cambridge University Press, London, 1929.

Kopal, Z., "Close Binary Systems", Chopsan-Hall and John Wiley, American Rocket Society Meeting, San Diego, Jun. 1959.

Kuiper, G. P., "On the Origin of the Solar System", National Academy of Sciences. Proceedings, V. 37, 1951, p. 1-14.

Kuiper, G. P., "On the Evolution of the Protoplanets", National Academy of Sciences. Proceedings, V. 37, 1951, p. 383-393.

Kuiper, G. P., "On the Origin of the Irregular Satellites", National Academy of Sciences. Proceedings, V. 37, 1951, p. 717-721.

Leadabrand, R. L., "Radar Astronomy Symposium Report", Journal of Geophysical Research, V. 65, 1960, p. 1103-1118.

Liller, W. (Editor), "Space Astrophysics", McGraw-Hill Book Company, New York, 1961, 272 pp.

Locke, J. L., "Space Astronomy", Canadian Aeronautical Journal, V. 6, Sept. 1960, p. 244-247.

McEwan, R. J., (see Gibson, J. E., 1959).

Moulton, F. R., "Astronomy", MacMillan Company, New York, 1931, 549 pp.

Pannekock, A., "A History of Astronomy", Interscience Publishers, New York, 1961.

Plummer, H. C., "An Introductory Treatise on Dynamical Astronomy", Dover Publications, New York, 1960.

Rossi, B., (see Giacconi, R., 1960).

Schroeder, W., "Practical Astronomy", Philosophical Library, New York, 1957, 206 pp.

Senior, T. A., Siegel, K. M., and Bracewell (Editors), "Paris Symposium on Radio Astronomy", Stanford University Press, Stanford University, 1959.

Shoemaker, E. M., Hackman, R. J., and Eggleton, R. E., "Interplanetary Correlation of Geologic Time", American Astronautical Society, 7th Annual Meeting, 1961, 30 pp.

Sidgwick, J. B., "Introducing Astronomy", MacMillan, New York, 1957, 259 pp.

Siegel, K. M., (see Senior, T. A., 1959).

Struve, O., "McCreas Theory of the Solar System's Origin", Sky and Telescope, V. 19, 1960, p. 154-156.

Watson, J. C., "Theoretical Astronomy", Lippincott Company, Philadelphia, 1900.

Worley, C. E., (see Herbig, G. H., 1956).

### III. CRATERING PHENOMENA - EXCLUDING NATURAL PHENOMENA

Bell, J. E., "Study of Initial Conditions in Constant Velocity Impact", *Journal of Applied Physics*, V. 31, Dec. 1960, p. 2188-2195.

Birkoff, G., MacDougall, D. P., Pugh, E. M., and Taylor, G., "Explosives With Lined Cavities", *Journal of Applied Physics*, V. 19, 1948, p. 563-581.

Bjork, R. L., (see Brode, H. L., 1961).

Brode, H. L., and Bjork, R. L., "Cratering From a Megaton Surface Burst", U. S. Office of the Secretary of Defense, Research and Engineering Bulletin 29, Shock, Vibration and Associated Environments, Part III, Jul. 1961, p. 1-29.

Collins, R. D., (see Kinrad, W. H., 1961).

Darton, N. H., "Explosion Craters", *Scientific Monthly*, V. 3, 1916, p. 417-430.

Decarli, P. S., and Jamieson, J. C., "Formation of Diamond by Explosive Shock", *Science*, V. 133, 1961, p. 1821-1822.

Gault, D. E., (see Moore, H. J., 1962).

Glasstone, S. (Editor), "The Effects of Nuclear Weapons", U. S. Atomic Energy Commission, Washington, D. C., 1957, 579 pp.

Hansen, W. R., and Lemke, R. W., "Geology of the U. S. G. S. and Rainier Tunnel Areas, Nevada Test Site", U. S. Geological Survey Openfile Report, 1959, 111 pp.

Hess, W. N., and Nordyke, M. D., "Throwout Calculation for Explosion Craters", *Journal of Geophysical Research*, V. 66, No. 10, 1961, p. 3405.

Jamieson, J. C., (see Decarli, P. S., 1961).

Johnson, G. W., and Violet, C. E., "Phenomenology of Contained Nuclear Explosions", Lawrence Radiation Laboratory Report 5124, 1958, 27 pp.

Kinrad, W. H., and Collins, R. D., "An Investigation of High-Velocity Impact Cratering Into Nonmetallic Targets and Correlation of Penetration Data for Metallic and Nonmetallic Targets", NASA TN D-726, Feb. 1961, 31 pp.

Lemke, R. W., (see Hansen, W. R., 1959).

MacCormack, R. W., (see Moore, H. J., 1962).

MacDougall, D. P., (see Birkoff, G., 1948).

Maurer, W. C., and Rinehart, J. S., "Impact Crater Formation in Rock", Hyper-velocity Impact, Fourth Symposium, Eglin AFB, Florida, V. 32, 1960, 20 pp.

Moore, H. J., Gault, D. E., and MacCormack, R. W., "Fluid Impact Craters and Hypervelocity-High Velocity Impact Experiments in Metals and Rocks", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Nordyke, M. D., (see Hess, W. N., 1961).

Opik, E. J., "Notes on the Theory of Impact Craters", Proceedings of the Cratering Symposium in Washington, D. C., Mar. 28-29, 1961.

Pugh, E. M., (see Birkoff, G., 1948).

Rinehart, J. S., "Some Observations on High-Speed Impact", Meteoritical Society. Contributions, V. 4, 1950, p. 299-305.

Rinehart, J. S., (see Maurer, W. C., 1960).

Rostoker, N., "The Formation of Craters by High-Speed Particles", Meteoritics, V. 1, 1953, p. 11-27.

Scully, C. N., "High-Velocity Impact Studies", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 4, 1959, p. 23-25.

Taylor, G., (see Birkoff, G., 1948).

Violet, C. E., (see Johnson, G. W., 1958).

#### IV. EXTRATERRESTRIAL MATTER

(COMETS, COSMIC DUST, METEORITES, METEORS, ETC.)

Ahrens, L. H., Edge, R. A., and Taylor, S. R., "The Uniformity of Concentration of Lithophile Elements in Chondrites With Particular Reference to CS", *Geochemica et Cosmochemica Acta*, V. 20, 1960, p. 260-272.

Alexander, W. M., (see Lagow, H. E., 1960).

Alexander, W. M., "Micrometeorite Studies From Earth Satellites", Problems Related to Interplanetary Matter, National Academy of Science, National Research Council, Publication 845, 1961, p. 69-72.

Alexander, W. M., McCracken, C. W., and Lagow, H. E., "Interplanetary Dust Particles of Micron Size Probably Associated With the Leonid Meteor Stream", *Journal of Geophysical Research*, V. 66, 1961, p. 3970-3973.

Alexander, W. M., (see McCracken, C. W., 1961).

Alexander, W. M., (see McCracken, C. W., 1961).

Amerunddin, A., (see Ehmann, W. D., 1961).

Ananthakrishnan, R., "Light Curves of Meteors", *Nature*, V. 187, 1960, p. 675-676.

Ananthakrishnan, R., "Anomalies in the Light Curves of Meteors Resulting From Fragmentation", *Nature*, V. 190, 1961, p. 896-897.

Anders, E., "The Record in Meteorites, II. On the Presence of Aluminum - 26 in Meteorites and Tektites", *Geochemica et Cosmochemica Acta*, V. 19, 1960, p. 53-62.

Anders, E., and Stevens, C., "Search for Extinct Lead 205 in Meteorites", *Journal of Geophysical Research*, V. 65, 1960, p. 3043-3047.

Anders, E., (see Fish, R. A., 1960).

Anders, E., (see Goles, G. G., 1960).

Anders, E., "Diamonds in Meteorites", Problems Related to Interplanetary Matter, National Academy of Science, National Research Council, Publication 845, 1961, p. 77-81.

Anders, E., (see Dufresne, E. R., 1961).

Anders, E., (see Goles, G. G., 1961).

Anders, E., (see Goles, G. G., 1961).

Anderson, E. C., and Van Dilla, M. A., "Gamma-Ray Spectrometry of a Sputnik 4 Fragment", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Anisimov, S. I., (see Perelman, T. L., 1961).

Anonymous, "The Asteroids", Sky and Telescope, V. 21, 1961, p. 150-151.

Appleton, E., and Naismith, R., "The Radio Detection of Meteor Trails and Allied Phenomena", Physical Society of London, Proceedings, V. 59, 1947, p. 461-473.

Arnold, J. R., "Cosmic-Ray Production on Radioactive Nuclides in Iron Meteorites", Problems Related to Interplanetary Matter, National Academy of Science, National Research Council, Publication 845, 1961, p. 45-50.

Arnold, J. R., Honda, M., and Lal, D., "Record of Cosmic-Ray Intensity in the Meteorites", Journal of Geophysical Research, V. 66, 1961, p. 3519-3531.

Axon, H. J., "Microstructural and Chemical Identity of the Bear Creek and Narraburra Iron Meteorites", Nature, V. 191, 1961, p. 1287.

Baadsgard, H., Campbell, F. A., Folinsbee, R. E., and Cumming, G. L., "The Bruderheim Meteorite", Journal of Geophysical Research, V. 66, 1961, p. 3574-3577.

Baker, R. L., "Sputtering as it is Related to Hyperbolic Meteorites", Applied Physics. Journal, V. 30, Apr. 1959, p. 550-555.

Baker, R. M., "Effect of Accommodation on the Transitional Aerodynamic Drag of Meteorites", Astrophysical Journal, V. 130, Nov. 1959, p. 1024-1026.

Beard, D. B., "Interplanetary Dust Distribution", Astrophysical Journal, V. 129, No. 2, 1959, p. 495-506.

Beard, D. B., (see Fremlin, H. H., 1961).

Bel Kovick, O. I., "A Determination of the Mean Square Deviation of the Time Rate of Meteors", Soviet Astronomy - A. J., 1961, p. 396-398.

Bernal, J. D., "Significance of Carbonaceous Meteorites in Theories on the Origin of Life", Nature, V. 190, 1961, p. 129-131.

Bieri, R. H., and Rutsch, W., "Rare Gas Isotopes in the Iron and Stone Phases of Bruderheim", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Bjork, R. L., "Meteoroid Hazard to Nuclear Spacecraft", Nucleonics, V. 19, Apr. 1961, p. 91-92.



- Bjork, R. L., "Meteoroids Vs. Space Vehicles", ARS Journal, V. 31, Jun. 1961, p. 803-807.
- Brandt, J. C., "A Note on the Gas Trail of Comets", Astronomical Journal, V. 67, No. 3, 1962, p. 180.
- Briggs, M. H., "Meteorites and the Origin of Life", Spaceflight, V. 2, Apr. 1959, p. 39-43.
- Briggs, M. H., "Organic Constituents of Meteorites", Nature, V. 191, 1961, p. 1137-1140.
- Briggs, R. E., "Steady-State Space Distribution of Meteoric Particles Under the Operation of the Poynting-Robertson Effect", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in Astronomical Journal, V. 67, No. 5, 1962, p. 267-286.
- Brown, H., "The Density and Mass Distribution of Meteoritic Bodies in the Neighborhood of the Earth's Orbit", Journal of Geophysical Research, V. 65, 1960, p. 1679-1683.
- Brown, H., "Addendum - The Density and Mass Distribution of Meteoritic Bodies in the Neighborhood of the Earth's Orbit", Journal of Geophysical Research, V. 66, 1961, p. 1316-1317.
- Brown, H., (see Duke, M., 1961).
- Buchwald, V., "The Iron Meteorite, Thule, North Greenland", Geochimica et Cosmochimica Acta, V. 25, 1961, p. 95.
- Campbell, F. A., (see Baadsgard, H., 1961).
- Cheng, S. I., "Meteoric Ablation Through Interfacial Instability", ARS Journal, V. 29, No. 8, 1959, p. 579-587.
- Clarke, W. B., and Thode, H. G., "Xenon in the Bruderheim Meteorite", Journal of Geophysical Research, V. 66, 1961, p. 3578-3759.
- Claus, G., and Nagy, B., "A Microbiological Examination of Some Carbonaceous Chondrites", Nature, V. 192, 1961, p. 594-596.
- Cook, A. F., and Hawkins, G. S., "The Meteoric Heat Echo", Smithsonian Contribution to Astrophysics, V. 5, No. 1, 1960, p. 1-7.
- Cook, A. F., and Hughes, R. F., "A Reduction Method for the Motions of Persistent Meteor Trails", Smithsonian Contributions to Astrophysics, V. 1, No. 2, 1957, p. 225-238.
- Crozier, W. D., "Micrometeorite Measurements - Satellite and Ground Level Data Compared", Journal of Geophysical Research, V. 66, 1961, p. 2973-2795.
- Cumming, G. L., (see Baadsgard, H., 1961).

Dallavalle, J. M., "Micromeritics", 2nd Ed., Pitman, 1948.

Davidson, E. H., and Winslow, P. C., "Space Debris Hazard Evaluation", NASA TN D-1105, 1961, 95 pp.

Davies, J. G., (see Ellyett, C. D., 1948).

Davies, J. G., and Gill, J. C., "Radio Echo Measurements of the Orbits of Faint Sporadic Meteors", Royal Astronomical Society. Monthly Notices, V. 121, 1960, p. 437-462.

Davis, J., Greenhow, J. S., and Hall, J. E., "Combined Photographic and Radio Echo Observations of Meteors", Royal Society of London, Proceedings, Series A, V. 253, Nov. 1959, p. 130-139.

Davis, J., Greenhow, J. S., and Hall, J. E., "The Effect of Attachment of Radio Echo Observations of Meteors", Royal Society of London. Proceedings, Series A, V. 253, Nov. 1959, p. 130-139.

Davis, R., (see Kammerer, O. F., 1962).

Dawson, K. R., Maxwell, J. A., and Parson, D. E., "A Description of the Meteorite Which Fell Near Abee, Alberta, Canada", Geochemica et Cosmochemica Acta, V. 21, 1960, p. 127-144.

Defelice, J., (see Fireman, E. L., 1960).

Defelice, J., (see Fireman, E. L., 1961).

Defelice, J., (see Tilles, D., 1962).

Dicke, R. H., "Diracs Cosmology and the Dating of Meteorites", AEC, NYO-8145, Nov. 1958, 4 pp.

Dingle, H., and Pettersson, H., "The Frequency of Meteorite Falls Throughout the Ages", Nature, V. 191, 1961, p. 482.

Dokuchaev, V. P., "Formation of an Ionized Meteor Trail", Soviet Astronomy - A. J., V. 3, 1960, p. 106-109.

Donn, B., "Coma Formation and an Artificial Comet Experiment", Astronomical Journal, V. 66, 1961, p. 282.

Duberg, J. E., "The Meteoritic Hazard of the Environment of a Satellite", NASA TN D-1248, Washington, May 1962, 34 pp.

Dubin, M., (see Manring, E. R., 1958).

Dubin, M., "Remarks on the Article by A. R. Hibbs - The Distribution of Micrometeorites Near the Earth", Journal of Geophysical Research, V. 66, 1961, p. 2592-2594.

Dubin, M., (see McCracken, C. W., 1961).

Dubin, M., (see McCracken, C. W., 1961).

Dubin, M., and McCracken, C. W., "Measurements of Distributions of Interplanetary Dust", Symposium - Small Meteoric Particles in the Earth's Neighborhood, Apr. 2, 1962, Cambridge, Massachusetts, in *Astronomical Journal*, V. 67, No. 5, 1962, p. 248-256.

Dufresne, A., "Selenium and Tellurium in Meteorites", *Geochemica et Cosmochemica Acta*, V. 20, 1960, p. 141-148.

Dufresne, E. R., and Anders, E., "The Record in the Meteorites - V. A Thermometer Mineral in the Higher Carbonaceous Chondrite", *Geochemica et Cosmochemica Acta*, V. 23, 1961, p. 200.

Duke, M., Maynes, D., and Brown, H., "The Petrography and Chemical Composition of the Brunderheim Meteorite", *Journal of Geophysical Research*, V. 66, 1961, p. 3557-3563.

Duke, M. B., "Possible Shock Metamorphism and Impact Brecciation in Basaltic Achondrites", Abstract of Paper Presented at the Second Western National Meeting, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Eberhardt, A., (see Eberhardt, P., 1961).

Eberhardt, P., and Hess, D. C., "Helium in Stone Meteorites", *Astrophysical Journal*, V. 131, 1960, p. 38-45.

Eberhardt, P., and Eberhardt, A., "Ne In Some Stone Meteorites", *Zeitschrift Naturforschung*, V. 16A, No. 3, 1961, p. 236-238.

Eddy, J. A., (see Newkirk, G., 1962).

Edge, R. A., (see Ahrens, L. H., 1960).

Ehmann, W. D., Amerunddin, A., Rushbrook, P. R., and Hurst, M. E., "Some Trace of Element Abundances in the Bruderheim Meteorite", *Journal of Geophysical Research*, V. 66, 1961, p. 3581-3583.

Ellyett, C. D., and Davies, J. G., "Velocity of Meteors Measured by Diffraction of Radio Waves From Trails During Formation", *Nature*, V. 161, 1948, p. 596-597.

Ellyett, C., and Keay, C. L., "All Sky Meteor Rates in the Southern Hemisphere", *Journal of Geophysical Research*, V. 66, 1961, p. 2590-2591.

Ellyett, C., (see Keay, C. L., 1961).

Eshleman, V. R., and Gallagher, P. B., "Radar Studies of 15th - Magnitude Meteors", Symposium - Small Meteoric Particles in the Earth's Neighborhood, Apr. 2, 1962, Cambridge Massachusetts, in *Astronomical Journal*, V. 67, No. 5 1962, p. 245-248.

Feller-Kniepmeier, M., and Uhlig, H. H., "Nickel Analysis of Metallic Meteorites by the Electron-Probe Microanalyser", *Geochemica et Cosmochemica Acta*, V. 21, 1961, p. 257.

Fialko, E. I., "Mean Hourly Rate of Meteors Recorded by Radar", Soviet Astronomy - A. J., V. 3, 1960, p. 612-614.

Fialko, E. I., "A Method for Studying the Distribution by Mass of Meteoric Bodies", Soviet Astronomy - A. J., V. 3, 1960, p. 970-973.

Fialko, E. I., "The Duration Distribution of Meteor Radio Echoes, II. Reflections from Unstable Trails", Soviet Astronomy - A. J., V. 4, 1960, p. 498-501.

Fialko, E. I., "The Velocity Distribution of Meteoroids", Soviet Astronomy - A. J., V. 4, 1960, p. 334-336.

Fialko, E. I., "The Dependency of the Mean Hourly Rates of Recorded Meteors on the Parameters of Meteoroids, the Atmosphere, and the Radar System", Soviet Astronomy - A. J., V. 4, 1961, p. 711-721.

Finston, H. L., (see Kammerer, O. F., 1962).

Fireman, E. L., and Defelice, J., "Argon-39 and Tritium in Meteorites", Geochemica et Cosmochemica Acta, V. 18, 1960, p. 183-192.

Fireman, E. L., and Fisher, D. E., "Uranium in the Sikhote-Alin Meteorite and Its Relation to the Lead Method of Age Determination", Nature, V. 192, 1961, p. 644-645.

Fireman, E. L., and Defelice, J., "Tritium, Argon 37, and Argon 39 in the Bruderheim Meteorite", Journal of Geophysical Research, V. 66, 1961, p. 3547-4551.

Fireman, E. L., "Argon 37, Argon 39, and Tritium in Recent Meteorite Falls", Problems Related to Interplanetary Matter, National Academy of Science, National Research Council, Publication 845, 1961, p. 28-30.

Fireman, E. L., and Kietner, G. A., "The Nature of Dust Collected at High Altitudes", Geochemica et Cosmochemica Acta, V. 24, 1961, p. 10.

Fireman, E. L., (see Tilles, D., 1962).

Fish, R. A., Goles, G. G., and Anders, E., "The Record in the Meteorites, III' On the Development of Meteorites in Asteroidal Bodies", Astrophysical Journal, V. 132, 1960, p. 243-258.

Fish, R. A., (see Goles, G. G., 1960).

Fisher, D. E., and Schaeffer, O. A., "Cosmogenic Nuclear Reactions in Iron Meteorites", Geochemica et Cosmochemica Acta, V. 20, 1960, p. 5-14.

Fisher, D. E., (see Fireman, E. L., 1961).

Fisher, D. E., "Space Erosion of the Grant Meteorite", Journal of Geophysical Research, V. 66, 1961, p. 1509-1512.

- Fisher, D. E., "Cosmic-Ray Ages of the Treysa and Sikhote-Alin Meteorites", *Nature*, V. 190, 1961, p. 225-227.
- Folinsbee, R. E., (see Baadsgard, H., 1961).
- Forsyth, P. A., and Vogan, E. L., "The Duration of Forward-Scattered Signals From Meteor Trails", *Canadian Journal of Physics*, V. 34, Jun. 1956, p. 535-545.
- Fremlin, H. H., Beard, D. B., and Whipple, F. L., "The Dust Cloud About the Earth", *Nature*, V. 191, 1961, p. 31-34.
- Fullan, E. F., (see Hemenway, C. L., 1961).
- Fullan, E. F., (see Hemenway, C. L., 1962).
- Furman, A. M., "The Theory of Ionization in Meteor Trails, I. Meteorites, III. On the Development of Meteorites in Asteroidal Bodies", *Astrophysical Journal*, V. 132, 1960, p. 243-258.
- Furman, A. M., "A Theory of Ionization of Meteor Trails, II. The Role of Ionization Phenomena at the Surface of a Meteoroid in the Ionization of the Meteor Trail", *Soviet Astronomy - A. J.*, V. 4, 1961, p. 705-710.
- Gallagher, P. B., (see Eshleman, V. R., 1962).
- Gast, P. W., "Alkali Metals in Stone Meteorites", *Geochemica et Cosmochemica Acta*, V. 19, 1960, p. 1-4.
- Gast, P. W., "Strontium and Rubidium in Stone Meteorites", *Problems Related to Interplanetary Matter*, National Academy of Science, National Research Council, Publication 845, 1961, p. 85-89.
- Giessen, B. C., and Grant, N. J., "Metallurgical Investigation of Sputnik 4 Fragment", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.
- Gill, J. C., (see Davies, J. G., 1960).
- Goles, G. G., (see Fish, R. A., 1960).
- Goles, G. G., Fish, R. A., and Anders, E., "The Record in Meteorites, I. The Former Environment of Stone Meteorites as Deduced From K40 - A40 Ages", *Geochemica et Cosmochemica Acta*, V. 19, 1960, p. 177-195.
- Goles, G. G., and Anders, E., "The Record in Meteorites, 6. On the Chronology of the Solar System", *Journal of Geophysical Research*, V. 66, 1961, p. 889-898.
- Goles, G. G., and Anders, E., "On the Geochemical Character of Iodine in Meteorites", *Journal of Geophysical Research*, V. 66, 1961, p. 3075-3077.
- Grant, N. J., (see Giessen, B. C., 1962).

Greenhow, J. S., (see Davis, J., 1959).

Greenhow, J. S., (see Davis, J., 1959).

Greenhow, J. S., and Hall, J. E., "The Variation of Meteor Heights With Velocity and Magnitude", Royal Astronomical Society. Monthly Notices, V. 121, 1960, p. 174-182.

Greenhow, J. S., and Hall, J. E., "The Importance of Initial Trail Radius on the Apparent Height and Number Distributions of Meteor Echoes", Royal Astronomical Society. Monthly Notices, V. 121, 1960, p. 183-196.

Gustavson, J., "Meteoric Dust", Jet Propulsion, V. 27, Feb. 1957, p. 207-208.

Hall, J. E., (see Davis, J., 1959).

Hall, J. E., (see Davis, J., 1959).

Hall, J. E., (see Greenhow, J. S., 1960).

Hall, J. E., (see Greenhow, J. S., 1960).

Halliday, I., "The Spectrum of an Asteroidal Meteor Fragment", Astrophysical Journal, V. 132, Sept. 1960, p. 482-485.

Hara, T., and Sandell, E. B., "Meteoritic Abundance of Rutherfordium", *Geochemica et Cosmochemica Acta*, V. 21, 1960, p. 145-150.

Hawkins, G. S., "The Method of Reduction of Short-Trail Meteors", Smithsonian Contributions to Astrophysics, V. 1, No. 2, 1957, p. 207-214.

Hawkins, G. S., (see Cook, A. F., 1960).

Hawkins, G. S., and Southworth, R. B., "The Statistics of Meteors in the Earth's Atmosphere", Smithsonian Contributions to Astrophysics, V. 2, No. 11, 1958, p. 349-369.

Hawkins, G. S., and Howard, W. E., "Decay of Light From a Meteor Train", Astrophysical Journal, V. 130, Nov. 1959, p. 1003-1007.

Hawkins, G. S., "Asteroidal Fragments", Astronomical Journal, V. 65, 1960, p. 318-322.

Hawkins, G. S., "Radar Determination of Meteor Orbits", Symposium - Small Meteoric Particles in the Earth's Neighborhood, Apr. 2, 1962, Cambridge, Massachusetts, in Astronomical Journal, V. 67, No. 5, 1962, p. 241-244.

Hemenway, C. L., Fullan, E. F., and Phillips, L., "Nanometeorites", Nature, V. 190, 1961, p. 897-898.

Hemenway, C. I., Soberman, R. K., and Fullan, E. F., "Micrometeorite Collection From a Recoverable Sounding Rocket", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in Astronomical Journal, V. 67, No. 2, 1962, p. 109-124.

Heminway, C. L., and Soberman, R. K., "Studies of Micrometeorites Obtained From A Recoverable Sounding Rocket", Symposium - Small Meteoric Particles in the Earth's Neighborhood, Apr. 2, 1962, Cambridge, Massachusetts, in *Astronomical Journal*, V. 67, No. 5, 1962, p. 256-266.

Hess, D. C., and Marshall, R. R., "The Isotropic Compositions and Concentrations of Lead in Some Chondritic Stone Meteorites", *Geochemica et Cosmochemica Acta*, V. 20, 1960, p. 284-299.

Hess, D. C., (see Eberhardt, P., 1960).

Hey, J. S., Parsons, S. J., and Stewart, G. S., "Radar Observations of the Giacobinid Meteor Shower", *Royal Astronomical Society. Monthly Notices*, V. 107, 1947, p. 176-183.

Hey, M. H., (see Prior, G. T., 1953).

Honda, M., (see Arnold, J. R., 1961).

Howard, W. E., (see Hawkins, G. S., 1959).

Hughes, R. F., (see Cook, A. F., 1957).

Hurst, M. E., (see Ehmann, W. D., 1961).

Isakovich, M. A., and Roi, N. A., "An Acoustical Method for the Measurement of the Mechanical Parameters of Meteorites", *Artificial Earth Satellites*, V. 2, Edited by I. V. Kurnosova, Translated from Russian by Plenum Press, New York, 1960, p. 105-107.

Jacchia, L. G., (see Whipple, F. L., 1957).

Jacchia, L. G., "On Two Parameters Used in the Physical Theory of Meteors", *Smithsonian Contributions to Astrophysics*, V. 2, No. 9, 1958, p. 181-187.

Jaeger, J. C., (see Lovering, J. F., 1960).

Kaechele, L. E., and Olshaker, A. E., "Meteoroids - Implications for the Design of Space Structures", *Aerospace Engineering*, V. 19, May, 1960, p. 44-45, and 98.

Kaiser, T. R., "The Determination of the Incident Flux of Radio - Meteors", *Royal Astronomical Society. Monthly Notices*, V. 121, 1960, p. 284-298.

Kammerer, O. F., Davis, R., Finston, H. L., and Sadophy, J., "Chemical and Metallographic Studies of Sputnik 4 Fragments", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in *American Geophysical Union. Transactions*, V. 43, No. 4, Dec. 1962.

Kashcheev, B. L., and Lebedinets, V. N., "The Structure of the Geminid Shower", *Soviet Astronomy - A. J.*, V. 3, 1960, p. 615-625.

Kashcheev, B. L., and Lebedinets, V. N., "The Structure of the Quadrantid Meteor Stream", *Soviet Astronomy - A. J.*, V. 3, 1960, p. 114-117.

Kaye, J. H., (see Shedlovsky, J. P., 1962).

Keay, C. L., (see Ellyett, C., 1961).

Keay, C. L., and Ellyett, C., "The Latitude Dependence of Radar Meteor Shower Observations", Journal of Geophysical Research, V. 66, Aug. 1961, p. 2337-2343.

Kent, G. S., "The Fading of Radio Waves Reflected Obliquely From Meteor Trails", Atmosphere and Terrestrial Physics. Journal, V. 19, Dec. 1960, p. 272-283.

Kietner, G. A., (see Fireman, E. L., 1961).

Kigoshi, K., (see Reed, G. W., 1960).

Klass, P. L., "Meteor Burst Extends VHF Radio Range", Aviation Week, V. 66, Jun. 1957, p. 96-97, 99-101.

Komissarov, O. D., Nazarova, T. N., Neugodov, L. N., Poloskov, S. M., and Rusakov, L. Z., "Micrometeorite Studies Using Rockets and Satellites", Artificial Earth Satellites No. 2, Academy of Sciences Program, Dec. 27-29, 1962, Stanford University, Stanford, California, Pergamon Press, 1961, p. 460-465.

Kornhauser, M., "Satellite Pressure Losses Caused by Meteoroid Impacts", ARS Journal, V. 30, No. 5, 1960, p. 475-479.

Kozai, Y., "Secular Perturbations of Asteroids With High Inclination and Eccentricity", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in Astronomical Journal, V. 67, No. 9, 1962, p. 571-590.

Lagow, H. E., and Alexander, W. M., "Recent Direct Measurements by Satellites of Cosmic Dust in the Vicinity of the Earth", NASA TN D-488, Sept. 1960, 11 pp.

Lagow, H. E., Schaefer, D. H., and Schaeffert, J. C., "Micrometeoritic Impact Measurements on a 20 Inch Diameter Sphere at 700 to 2500 Km Altitude", Annuals of the IGY, V. 12, No. 2, Pergamon Press, 1961, p. 465-472.

Lagow, H. E., (see Alexander, W. M., 1961).

Lal, D., (see Arnold, J. R., 1961).

Lapaz, J., (see Lapaz, L., 1961).

Lapaz, L., and Lapaz, J., "Space Nomads, Meteorites in Sky, Field and Laboratory", Holiday House, New York, 1961.

Lasch, J. E., (see Schmidt, R. A., 1960).

Leavastu, T., and Mellis, O., "Size and Mass Distribution of Cosmic Dust", Journal of Geophysical Research, V. 66, Aug. 1961, p. 2507-2508.



- Lebedinets, V. N., (see Kashcheev, B. L., 1960).
- Lebedinets, V. N., (see Kashcheev, B. L., 1960).
- Lovell, A. C., "Meteor Astronomy", Oxford University Press, Oxford, 1954.
- Lovering, J. F., "Micrometeorite Impacts to an Altitude of 135 Km", Planetary and Space Science, V. 2, 1959, p. 75-77.
- Lovering, J. F., Parry, L. G., and Jaeger, J. C., "Temperatures and Mass Losses in Iron Meteorites During Ablation in the Earth's Atmosphere", *Geochemica et Cosmochemica Acta*, V. 19, 1960, p. 156-167.
- Lyttleton, R. A., "The Comets and Their Origin", Cambridge University Press, New York, 1953, 173 pp.
- Mainstone, J. S., "The Calculation of Meteor Velocities From Continuous - Wave Radio Diffraction Effects From Trails", Royal Astronomical Society. Monthly Notices, V. 120, 1960, p. 517-529.
- Manning, L. A., Villard, O. G., and Peterson, A. M., "Radio Doppler Investigation of Meteoric Heights and Velocities", *Applied Physics. Journal*, V. 20, 1949, p. 475-479.
- Manring, E. R., and Dubin, M., "Satellite Micrometeorite Measurements", IGY Satellite Report No. 3, IGY World Data Center A, Rockets and Satellites, National Academy of Sciences, May 1958.
- Manring, E. R., "Micrometeorite Measurements From 1958 Alpha and Gamma Satellite", *Planetary and Space Science*, V. 1, Jan. 1959, p. 27-31.
- Maringer, R. E., "Ablation Deposits on Iron Meteorites", *Geochemica et Cosmochemica Acta*, V. 19, 1960, p. 5-6.
- Marochnik, L. S., "The Form of Cometary Envelopes", *Soviet Astronomy - A. J.*, V. 4, 1960, p. 480-484.
- Marshall, R. R., (see Hess, D. C., 1960).
- Marvin, U. B., "Mineralogy of the Melted Portion of Sputnik 4", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in *American Geophysical Union. Transactions*, V. 43, No. 4, Dec. 1962.
- Mason, B., "The Origin of Meteorites", *Journal of Geophysical Research*, V. 65, 1960, p. 2965-2970.
- Mason, B., "Origin of Chondrules and Chondritic Meteorites", *Nature*, V. 186, 1960, p. 230-231.
- Maurice, D., "Direct Measurement of Meteoritic Dust Using Rocket Stations", *Aerospace Engineering*, May 1960.
- Maxwell, J. A., (see Dawson, K. R., 1960).

Maynes, D., (see Duke, M., 1961).

McCracken, C. W., (see Alexander, W. M., 1961).

McCracken, C. W., Alexander, W. M., and Dubin, M., "Direct Measurements of Interplanetary Dust Particles in the Vicinity of Earth", NASA TN D-1174, 1961.

McCracken, C. W., Alexander, W. M., and Dubin, M., "Direct Measurement of Interplanetary Dust Particles in the Vicinity of the Earth", Nature, V. 192, 1961, p. 441-443.

McCracken, C. W., (see Dubin, M., 1962).

McCrosky, R. E., "A Rapid Method of Meteor Trail Reduction", Smithsonian Contributions to Astrophysics, V. 1, No. 2, 1957, p. 215-224.

McKinley, D. R., and Millman, P. M., "A Phenomenological Theory of Radar Echoes from Meteors", IRE Proceedings, V. 37, 1949, p. 364-375.

McKinley, D. R., (see Millman, P. M., 1956).

McKinley, D. R., "Meteor Science and Engineering", McGraw-Hill, New York, 1961.

McKinley, D. R., "Introduction to Symposium on Small Meteoric Particles in Earth's Neighborhood", Symposium - Small Meteoric Particles in the Earth's Neighborhood, Apr. 2, 1962, Cambridge, Massachusetts, in Astronomical Journal, V. 67, No. 5, 1962, p. 233-235.

Mellis, O., (see Leavastu, T., 1961).

Millman, P. M., (see McKinley, D. R., 1949).

Millman, P. M., "Radio Observations of Meteors", Science, V. 120, 1954, p. 325-328.

Millman, P. M., and McKinley, D. R., "Meteor Echo Durations and Visual Magnitudes", Canada Journal of Physics, V. 34, Jan. 1956, p. 50-61.

Millman, P. M., "Meteor News - The Heights of Meteors", Royal Astronomical Society of Canada. Journal, V. 52, 1958, p. 230-232.

Millman, P. M., "The Meteor Radar Echo - An Observational Survey", Symposium - Small Meteoric Particles in the Earth's Neighborhood, Apr. 2, 1962, Cambridge, Massachusetts, in Astronomical Journal, V. 67, No. 5, 1962, p. 235-244.

Mirtov, B. A., "The Mechanism of Formation of a Meteor Trail", Soviet Astronomy - A. J., V. 4, 1960, p. 485-488.

Mirtov, B. A., "Meteoric Matter and Some Problems of Geophysics of the High Layers of the Atmosphere", Artificial Earth Satellites, Academy of Sciences USSR, No. 4, 1960, p. 118-134. Translated in ARS Journal, V. 32, Jan. 1962, p. 143-150.

- Moore, C. B., "Researches on Meteorites", John Wiley and Sons, New York, 1962.
- Mosen, A. W., (see Schmidt, R. A., 1960).
- Mueller, G., "The Properties and Theory of Genesis of the Carbonaceous Complex Within the Cold Bokveld Meteorite", *Geochemica et Cosmochemica Acta*, V. 4, 1953, p. 1-10.
- Murthy, V. R., "Isotropic Composition of Silver in an Iron Meteorite", *Physical Review*, V. 5, 1960, p. 539-540.
- Nagy, B., (see Claus, G., 1961).
- Naismith, R., (see Appleton, E., 1947).
- Nazarova, T. N., (see Komissarov, O. D., 1961).
- Neugodov, L. N., (see Komissarov, O. D., 1961).
- Newkirk, G., and Eddy, J. A., "Upper Limit of Meteoritic Influx From Corona-graphic Measurements in the Stratosphere", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in *Astronomical Journal*, V. 67, No. 2, 1962, p. 109-124.
- Nininger, H. H., "Our Stone-Pelted Planet", Houghton Mifflin, Boston, 1933.
- Olehy, D. A., (see Schmidt, R. A., 1960).
- Olshaker, A. E., (see Kaechele, L. E., 1960).
- Olshaker, A. E., "Experimental Investigation in Lead of the Whipple Meteor Bumper", *Applied Physics. Journal*, V. 31, Dec. 1960, p. 2118-2120.
- Opik, E. J., "Meteor Radiation, Ionization and Atomic Luminous Efficiency", *Royal Society of London. Proceedings*, V. 230, Jul. 1955, p. 463-501.
- Parry, L. G., (see Lovering, J. F., 1960).
- Parson, D. E., (see Dawson, K. R., 1960).
- Parsons, S. J., (see Key, J. S., 1947).
- Peregudov, R. I., "Dependence of the Duration of a Meteor Reflection Record on the Radar System Parameters", *Soviet Astronomy - A. J.*, V. 4, 1960, p. 502-507.
- Perelman, T. L., and Anisimov, S. I., "On Density Distribution of Charged Particles in Meteor Trails", *Akademiya Nauk SSSR. Doklady*, V. 136, No. 4, 1961, p. 810-812, (Translated by NASA, TT-F-8031).
- Peterson, A. M., (see Manning, L. A., 1949).
- Pettersson, H., (see Dingle, H., 1961).

Phillips, L., (see Hemenway, C. L., 1961).

Poloskov, S. M., (see Komissarov, O. D., 1961).

Popova, M. D., "The Curvature of the Paths of Some Meteors During Their Motion Through the Earth's Atmosphere", Soviet Astronomy - A. J., V. 4, 1960, p. 332-333.

Prior, G. T., and Hey, M. H., "Catalogue of Meteorites", British Museum, London, 1953.

Rabe, E., "On the Formation of Rapidly Rotating Asteroids", Astrophysical Journal, V. 131, 1960, p. 231-240.

Rao, M. S., "Analysis of Meteoric Body Doppler Radar Records Taken During a Gemind Shower Period", Canadian Journal of Physics, V. 36, Jul. 1958, p. 840-848.

Reed, G. W., Kigoshi, K., and Turkevich, A., "Determinations of Concentrations of Heavy Elements in Meteorites by Activation Analysis", Geochemica et Cosmochemica Acta, V. 20, 1960, p. 122-140.

Reiffel, L., "Erosion of Meteorites in Space and the Density of Interplanetary Gas", Nature, V. 185, 1960, p. 821-823.

Reiffel, L., "Structural Effects and Particle Content of Interplanetary Space", ARS Journal, V. 30, 1960, p. 654-655.

Ringwood, A. E., "The Novo Urei Meteorite", Geochemica et Cosmochemica Acta, V. 20, 1960, p. 1-4.

Ringwood, A. E., "Cohenite as a Pressure Indicator in Iron Meteorites", Geochemica et Cosmochemica Acta, V. 20, 1960, p. 155-157.

Ringwood, A. E., "Silicon in the Metal Phase of Enstatite Chondrites", Nature, V. 186, 1960, p. 465-466.

Robey, D. H., "An Hypothesis on the Slow Moving Green Fireballs", British Interplanetary Society. Journal, V. 17, Sept.-Oct. 1960, p. 398-411.

Roi, N. A., (see Isakovich, M. A., 1960).

Rozenblyum, N. D., "The Use of the Photogrammetric Method in Determining the Spatial Coordinates of Points on a Meteor Trajectory", Soviet Astronomy - A. J., V. 3, 1960, p. 975-985.

Rusakov, L. Z., (see Komissarov, O. D., 1961).

Rushbrook, P. R., (see Ehmann, W. D., 1961).

Rutsch, W., (see Bieri, R. H., 1962).

Sadophy, J., (see Kammerer, O. F., 1962).

- Sandell, E. B., (see Hara, T., 1960).
- Schaefer, D. H., (see Lagow, H. E., 1961).
- Schaeffer, O. A., and Zohringer, J., "Helium Neon, and Arson Isotopes in Some Iron Meteorites", *Geochemica et Cosmochemica Acta*, V. 19, 1960, p. 94-99.
- Schaeffer, O. A., (see Fisher, D. E., 1960).
- Schaffert, J. C., (see Lagow, H. E., 1961).
- Schindewolf, U., "Selenium and Tellurium Content of Stony Meteorites by Neutron Activation", *Geochemica et Cosmochemica Acta*, V. 19, 1960, p. 134-138.
- Schmidt, R. A., Mosen, A. W., Suffredini, C. S., Lasch, J. E., Sharp, R. A., and Olehy, D. A., "Abundance of the Rare-Earth Elements, Lanthanum to Lutetium, in Chondritic Meteorites", *Nature*, V. 186, 1960, p. 863-866.
- Sharp, R. A., (see Schmidt, R. A., 1960).
- Shedlovsky, J. P., and Kaye, J. H., "Radioactive Nuclides Produced by Cosmic Rays in Sputnik 4", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in *American Geophysical Union. Transactions*, V. 43, No. 4, Dec. 1962.
- Singer, S. F., "The Effect of Meteoritic Particles on a Satellite", *Jet Propulsion*, V. 26, No. 12, 1956, p. 1071.
- Singer, S. F., "Interplanetary Dust Near the Earth", *Nature*, V. 192, 1961, p. 321-323.
- Sloanaker, R. M., (see Mayer, C. H., 1958).
- Soberman, R. K., (see Hemenway, C. L., 1962).
- Soberman, R. K., (see Hemenway, C. L., 1962).
- Southworth, R. B., (see Hawkins, G. S., 1958).
- Southworth, R. B., "Deceleration of Radio Meteors", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in *Astronomical Journal*, V. 67, No. 5, 1962, p. 267-286.
- Stevens, C., (see Anders, E., 1960).
- Stewart, G. S., (see Hey, J. S., 1947).
- Suffredini, C. S., (see Schmidt, R. A., 1960).
- Swetnick, M. J., "Meteoric Abrasion Studies Proposed for Vanguard", *Journal of Astronautics*, V. 4, No. 4, 1957, p. 69-71.

Swetnick, M. J., "Meteoric Abrasion Studies Proposed for Vanguard", *Journal of Astronautics*, V. 4, No. 4, 1957, p. 72-75.

Taylor, S. R., (see Ahrens, L. H., 1960).

Thode, H. G., (see Clarke, W. B., 1961).

Tilles, D., Fireman, E. L., and Defelice, J., "H-3 and A-37 in a Fragment of Sputnik 4", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in *American Geophysical Union. Transactions*, V. 43, No. 4, Dec. 1962.

Turkevich, A., (see Reed, G. W., 1960).

Uhlig, H. H., (see Feller-Kniepmeier, M., 1961).

Van Dilla, M. A., (see Anderson, E. C., 1962).

Villard, O. G., (see Manning, L. A., 1949).

Vogan, E. L., (see Forsyth, P. A., 1956).

Wasson, J. T., "Radioactivity in Sputnik 4 Fragment", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in *American Geophysical Union. Transactions*, V. 43, No. 4, Dec. 1962.

Weiss, A. A., "Meteor Height Distributions and the Fragmentation Hypothesis", *Australian Journal of Physics*, V. 13, Sept. 1960, p. 532-549.

Whipple, F. L., and Wright, F. W., "Methods for the Study of Shower Radiants From Photographic Meteor Trails", *Smithsonian Contributions to Astrophysics*, V. 1, No. 2, 1957, p. 239-243.

Whipple, F. L., and Jacchia, L. G., "Reduction Methods for Photographic Meteor Trails", *Smithsonian Contributions to Astrophysics*, V. 1, No. 2, 1957, p. 183-206.

Whipple, F. L., "Meteoric Risk to Space Vehicles", *ARS Preprint*, No. 499-57, Oct. 1957.

Whipple, F. L., "The Meteoric Risk to Space Vehicles", 8th International Astronautical Congress. *Proceedings*, Barcelona, 1957, Wien-Springer-Verlag, 1958, p. 418-428.

Whipple, F. L., "The Earth's Dust Belt", *Astronautical Sciences Review*, V. 3, 1961, p. 17-20.

Whipple, F. L., (see Fremlin, H. H., 1961).

Whipple, F. L., "On the Distribution of Semi-Major Axes Among Comet Orbits", *Astronomical Journal*, V. 67, No. 1, 1962, p. 1.

Whipple, F. L., "Meteoritic Erosion in Space", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in Astronomical Journal, V. 67, No. 5, 1962, p. 267-286.

Winer, D. E., "A Reivew of Extraterrestrial Matter", Institute of Environmental Sciences. Proceedings, 1961, p. 455-464.

Winslow, P. C., (see Davidson, E. H., 1961).

Wright, F. W., (see Whipple, F. L., 1957).

Zadunaisky, P. E., "Preliminary Report on a New Computation of the Orbit of Halley's Comet", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in Astronomical Journal, V. 67, No. 5, 1962, p. 267-286.

Zohringer, J., (see Schaeffer, O. A., 1960).

## V. MATERIALS - SPACE ENVIRONMENT EFFECTS

Dow, N. F., "The Ionizing Radiation in Space-Structural Implications", Aerospace Engineering, May 1960.

Happe, R. A., "Materials in Space", Ordnance, V. 45, Jan.-Feb. 1961, p. 578-580.

Jones, O. J., "The Metal Beryllium", Shell Aviation News, Aug. 1960, p. 7-11.

Reiffel, I., "Structural Damage and Other Effects of Solar Plasmas", ARS Journal, V. 30, 1960, p. 258-262.

Rittenhouse, J. B., "Behavior of Materials in Space", California Institute of Technology, Jet Propulsion Laboratory, Research Summary 36-8, May 1961, p. 92-94.

Robey, D. H., "Protecting Against Protons - Charged Particle Hazards to Man in Space", SAE Journal, V. 68, Nov. 1960, p. 55-56.



## VI. METEORITE CRATERING AND ASSOCIATED PHENOMENA

Albritton, C. C., (see Boon, J. D., 1937).

Albritton, C. C., (see Boon, J. D., 1938).

Barringer, D. M., "Coon Mountain and Its Crater", Academy of National Sciences, Philadelphia Proceedings, V. 57, 1905, p. 861-886.

Barringer, D. M., "Meteor Crater (Formerly Called Coon Mountain or Coon Butte) In Northern Central Arizona", Published by the Author, 1910, 24 pp.

Barringer, D. M., "Further Notes on Meteor Crater, Arizona", Academy of National Sciences, Philadelphia Proceedings, V. 66, 1914, p. 556-565.

Barringer, D. M., "Further Notes on Meteor Crater in Northern Central Arizona (No. 2)", Academy of National Sciences, Philadelphia Proceedings, V. 76, 1924, p. 275-278.

Barringer, D. M., "The Most Fascinating Spot on Earth (Meteor Crater-Arizona)", Scientific American, V. 137, 1927, p. 52-54, 144-146, 244-246.

Beard, D. B., "On Meteoritic Impact", General Research in Flight Sciences, Jan. 1959-Jan. 1960, V. 1, Part 2, Fluid Mechanics, Lockheed Aircraft Corporation, Missiles and Space Division, Report LMSD-288-139, V. 1, Part 2, Jan. 1960.

Bjork, R. L., "Analysis of the Formation of Meteor Crater, Arizona, A Preliminary Report", Journal of Geophysical Research, V. 66, 1961, p. 3379-3388.

Bohn, J. L., Fuchs, O. P., et al., "Research Directed Towards the Study of Transducing Meteoric Impacts", Final Report, Temple University, Philadelphia, Pennsylvania, Physics Department, AD-249949, Dec. 1960, 92 pp.

Boon, J. D., "The Impact of Meteors", Field and Laboratory, V. 4, 1936, p. 56-59.

Boon, J. D., and Albritton, C. C., "Meteorite Scars in Ancient Rocks", Field and Laboratory, V. 5, 1937, p. 53-64.

Boon, J. D., and Albritton, C. C., "The Impact of Large Meteorites", Field and Laboratory, V. 6, 1938, p. 57-64.

Bunch, T. E., (see Cohen, A. J., 1961).

Chao, E. T., Shoemaker, E. M., and Madsen, B. M., "First Natural Occurrence of Coesite", Science, V. 132, 1960, p. 220-222.

Chao, E. T., Fahey, J. J., and Littler, J., "Coesite From Wabar Crater Near Al Hadida, Arabia", Science, V. 133, 1961, p. 882-883.

Cohen, A. J., Bunch, T. E., and Reid, A. M., "Coesite Discoveries Establish Cryptovolcanics as Fossil Meteorite Craters", *Science*, V. 134, 1961, p. 1624-1625.

Daly, J. W., (see Jakosky, J. J., 1932).

Darton, N. H., "Crater Mound, Arizona", *Geological Society of America Bulletin*, V. 56, 1945, p. 1134.

Dietz, R. S., "Meteorite Impact Suggested by Shatter Cones in Rock", *Science*, V. 131, 1960, p. 1781-1784.

Dietz, R. S., "Vredefort Ring Structure, Meteorite Impact Scar", *Journal of Geology*, V. 69, 1961, p. 416-499.

Dubin, M., "Meteoric Bombardment", In *Scientific Uses of Earth Satellites*, Edited by S. A. Van Allen, University of Michigan Press, Ann Arbor, 1956, p. 292-300.

Evans, G. L., (see Sellards, E. H., 1941).

Fahey, J. J., (see Chao, E. T., 1961).

Fairchild, H. L., "Nature and Fate of the Meteor Crater Bolide", *Science*, V. 72, 1930, p. 463-467.

Foster, G. E., "The Barringer (Arizona) Meteorite Crater", *Meteor Crater, Arizona*, 1957, 31 pp.

Fuchs, O. P., (see Bohn, J. L., 1960).

Gilvarry, J. J., (see Hill, J. E., 1956).

Gilvarry, J. J., and Hill, J. E., "The Impact of Large Meteorites", *Astrophysical Journal*, V. 124, 1956, p. 610-622.

Hager, D., "Crater Mound (Meteor Crater), Arizona, A Geologic Feature", *American Association of Petroleum Geologists. Bulletin*, V. 37, 1953, p. 821-857.

Hansen, C. F., "The Erosion of Meteors and High-Speed Vehicles in the Upper Atmosphere", *NASA TN-3962*, Mar. 1957, 38 pp.

Hardy, C. T., "Structural Dissimilarity of Meteor Crater and Odessa Meteorite Crater", *American Association of Petroleum Geologists. Bulletin*, V. 37, 1953, p. 2580.

Hill, J. E., and Gilvarry, J. J., "Application of the Baldwin Crater Relation to the Scaling of Explosion Craters", *Journal of Geophysical Research*, V. 61, 1956, p. 501-511.

Hill, J. E., (see Gilvarry, J. J., 1956).

Hoening, S. A., "Meteoric Dust Erosion Problem and Its Effect on the Earth Satellite", *Aeronautical Engineering Review*, V. 16, Jul. 1957, p. 34-38.

Jakosky, J. J., Wilson, C. H., and Daly, J. W., "Geophysical Examination of Meteor Crater, Arizona", American Institute of Mining and Metallurgical Engineering, Geophysical Prospecting, 1932, p. 1-35.

Kornhauser, M., "Prediction of Cratering, Caused by Meteoroid Impacts", Astronautical Science, Journal, V. 5, 1958, p. 58-63.

Littler, J., (see Chao, E. T., 1961).

Madsen, B. M., (see Chao, E. T., 1960).

Merrill, G. P., and Tassin, W., "Contributions to the Study of the Canyon Diablo Meteorites", Smithsonian Institute. Miscellaneous Collections, V. 50, 1907, p. 203-214.

Merrill, G. P., "The Meteor Crater of Canyon Diablo, Arizona, Its History, Origin, and Associated Meteoritic Irons", Smithsonian Institute. Miscellaneous Collections, V. 50, 1908, p. 461-498.

Meyerhoff, H., "Meeting of the Southwestern Division of the AAAS", Science, V. 111, 1950, p. 679-680.

Nininger, H. H., "Oxidation Studies at Barringer Crater, Metal-Center Pellets and Oxide Droplets", American Philosophical Society, Yearbook, 1949, p. 126-139.

Nininger, H. H., "Structure and Composition of Canyon Diablo Meteorites as Related to Zonal Distribution of Fragments", Popular Astronomy, V. 58, 1950, p. 169-173.

Nininger, H. H., "Condensation Globules at Meteor Crater", Science, V. 113, 1951, p. 755-756.

Nininger, H. H., "A Resume of Researches at the Arizona Meteorite Crater", Scientific Monthly, V. 72, 1951, p. 75-86.

Nininger, H. H., "Impactite Slag at Barringer Crater", American Journal of Science, V. 252, 1954, p. 277-290.

Nininger, H. H., "Arizona's Meteorite Crater", World Press, Denver, Colorado, 1956.

Opik, E. J., "Meteor Impact on Solid Surface", Irish Astronomical Journal, V. 5, 1958, p. 14-33.

Pecora, W. T., "Coesite Craters and Space Geology", Geotimes, V. 4, 1960, p. 16-19 and 32.

Reid, A. M., (see Cohen, A. J., 1961).

Riggs, F. B., (see Whipple, F. L., 1960).

Rinehart, J. S., "Distribution of Meteoritic Debris About the Arizona Meteorite Crater", Smithsonian Institute Contributions to Astrophysics, V. 2, 1958, p. 145-160.

Robey, D. H., "Meteoritic Dust and Ground Stimulation of Impact on Space Vehicles", British Interplanetary Society. Journal, V. 17, Jan.-Feb. 1959, p. 21-30.

Rogers, A. F., "A Unique Occurrence of Lechatellierite or Silica Glass", American Journal of Science, 5th Series, V. 19, 1930, p. 195-202.

Sellards, E. H., and Evans, G. L., "Statement of Progress of Investigation at Odessa Meteor Craters", Texas University, Bureau of Economic Geology, 1941, 13 pp.

Shoemaker, E. M., (see Chao, E. T., 1960).

Shoemaker, E. M., "Penetration Mechanics of High Velocity Meteorites, Illustrated by Meteor Crater, Arizona", 21st International Geological Congress Report, Pt. 18, 1960, p. 418-434.

Spencer, L. J., "Meteoric Iron and Silica-Glass From the Meteorite Craters of Henbury (Central Australia) and Wabar (Arabia)", Mineralogical Magazine, V. 23, 1933, p. 387-404.

Spencer, L. J., "Meteorite Craters as Topographical Features on the Earth's Surface", Smithsonian Institute Annual Report, For 1933, 1935, p. 307-326.

Tassin, W., (see Merrill, G. P., 1907).

Whipple, F. L., and Riggs, F. B., "Study of Atmospheric Entry and Impact of High Velocity Meteorites", Smithsonian Institution. Astrophysical Observatory, Cambridge, Massachusetts, Quarterly Status Report 18, AD-242417, Aug. 1960, 5 pp.

Wilson, C. H., (see Jakosky, J. J., 1932).

Wylie, C. C., "On the Formation of Meteoric Craters", Popular Astronomy, V. 41, 1933, p. 211-214.

Wylie, C. C., "Meteoric Craters, Meteors, and Bullets", Popular Astronomy, V. 42, 1934, p. 469-471.

Wylie, C. C., "Calculations on the Probable Mass of the Object Which Formed Meteor Crater", Popular Astronomy, V. 51, 1943, p. 97-99.

## VII. MOON

### a. GENERAL

Alter, D., "Scientific Aspects of the Lunar Surface", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 1, 1958, p. 2-10.

Alter, D., "Evolution of the Moon", Lunar and Planetary Exploration Colloquium. Proceedings, V. 2, No. 2, 1960, p. 1-6.

Alter, D., "The Evolution of the Moon", Astronomical Society of the Pacific. Publications, V. 73, 1961, p. 5-14.

Anonymous, "Advance Man to the Moon", Aero Digest, V. 63, 1951, p. 25-32.

Both, E. E., "A History of Lunar Studies-I", Buffalo Museum of Science. Magazine, V. 41, 1960, p. 20-23.

Both, E. E., "A History of Lunar Studies-II", Buffalo Museum of Science. Magazine, V. 41, 1960, p. 46-50.

Both, E. E., "A History of Lunar Studies-III", Science on the March, V. 41, 1961, p. 70-73.

Both, E. E., "A History of Lunar Studies-IV", Science on the March, V. 41, 1961, p. 89-94.

Baldwin, R. B., "The Face of the Moon", University of Chicago Press, Chicago, 1949, 239 pp.

Baldwin, R. B., "The Measure of the Moon", University of Chicago Press, 1963, p. 423.

Barabaskov, N. P., "New State in the Study of the Moon", Akademiya Nauk SSSR. Vestnick, No. 10, 1960, p. 32-36.

Breberstein, M., "Untersuchungen Ueber Den Ursprung Und Die Ausbildung Der Gegenwaertigen Anordnung Des Weltgebaeudes", Darmstadt, 1802.

Brown, H., "Chemical Resources on the Moon", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 3, 1958, p. 10-11.

Brown, H., (see Jastrow, R., 1960).

Cameron, A. G., "The Moon", Science and Technology. International. V. 5, 1962, p. 24.

Darwin, G. H., "The Tides", Houghton, Boston and New York, 1898.

Dauvillier, A., "L'Origin Photochimique de la Vie. Masson", Paris, 1958.

- Elger, T. G., "Selenographical Notes", The Observatory, V. 13, No. 168, 169, 171, 172, 173, 174, 175, 1890-1891.
- Fielder, G., "Structures of the Moon's Surface", Pergamon Press, New York, 1961, 266 pp.
- Firsoff, V. A., "Strange World of the Moon", Basic Books, New York, 1959.
- Firsoff, V. A., "Selenological Studies-I", British Astronomical Association. Journal, V. 71, 1961, p. 149.
- Gold, T., (see Jastrow, R., 1960).
- Gold, T., "The Moon", Space Astrophysics, edited by W. Liller, McGraw-Hill, 1961, Chapter 8.
- Green, J., "Geochemical Implications of Lunar Degassing", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 4, 1959, p. 1-18.
- Gruithuisen, F., "Selenognostische Fragmente", Vienna, 1821-1823.
- Gruithuisen, F., "Entdeckung Vieler Deutlichen Spurender Mondbewohner", Nuremberg, 1824.
- Gruithuisen, F., "Analekten Fuer Erdund Himmelskunde", Munich, 1828-1831.
- Gruithuisen, F., "Neuve Analekten", Munich, 1832-1836.
- Gruithuisen, F., "Natuswssenschaftlich Astronomisches Jahrbuch", Munich, 1838-1847.
- Hackman, R. J., (see Shoemaker, E. M., 1960).
- Jastrow, R., Urey, H. C., Gold, T., and Brown, H., "Discussing the Moon", Spaceflight, V. 2, 1960, p. 167-173.
- Kopal, Z. (editor), "Origin and History of the Moon", Academic Press, New York, 1961.
- Kopal, Z., "Thermal History of the Moon and of the Terrestrial Planets. Numerical Results", California Institute of Technology, Jet Propulsion Laboratory, TR 32-225, 1962, 108 pp.
- Kopal, Z., "Physics and Astronomy of the Moon", Academic Press, New York, 1962.
- Kuiper, G. P., "The Moon", in The Exploration of Space, edited by R. Jastrow, MacMillan Company, New York, 1960.
- Landerer, J. J., "La Evolution del Globo Lunar", Barcelona, 1910.
- Markov, A. V., "The Moon - A Russian View", (Russian Astronomic Observatory, Pulkovo, USSR), University of Chicago Press, Chicago, 1962, 391 pp.

- Moore, P. A., "What We Know About the Moon", British Interplanetary Society. Journal, V. 11, Jan. 1952, p. 19-40.
- Moore, P. A., "A Guide to the Moon", W. W. Norton Company, New York, 1953.
- Moore, P. A., (see Wilkins, N. P., 1955).
- Pickering, W. H., "The Moon", Doubleday, 1903.
- Proctor, R., "The Moon, Her Motions, Aspect, Scenery and Physical Condition", London, 1873.
- Rudaux, L., "La Lune et Son Historie", Paris, 1947.
- Schroeter, J. H., "Selenotopographische Fragmente Zur Genauern Kenntnirs Der Mondflacke, Ihrer Erlittenen Veranderungen Und Atmosphere", Gottingen, Vandenhoech-Ruprecht, V. 1 and 2, 1791 and 1802.
- Shoemaker, E. M., and Hackman, R. J., "Stratigraphic Basis for a Lunar Time Scale", International Astronomical Union Symposium 14, The Moon, Leningrad, 1960, Academic Press.
- Urey, H. C., "The Chemistry of the Moon", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 3, 1958, p. 1-9.
- Urey, H. C., "Primary and Secondary Objects", Symposium on Problems in Space Exploration, Washington, D. C., Apr. 1959.
- Urey, H. C., "Primary and Secondary Objects", Journal of Geophysical Research", V. 64, 1959, p. 1721-1737.
- Urey, H. C., (see Jastrow, R., 1960).
- Urey, H. C., "Science in Space - The Moon", National Academy of Science, National Research Council, 1960, 10 pp.
- Urey, H. C., "Criticism of the Melted Moon Theory", Journal of Geophysical Research, V. 65, 1960, p. 358-359.
- Urey, H. C., "The Duration of Intense Bombardment Processes on the Moon", Astrophysical Journal, V. 132, 1960, p. 502-503.
- Whipple, F. L., "Earth, Moon and Planets", Harvard University Press, Cambridge, 1941.
- Wilkins, J., "The Discovery of a New World, or a Discourse Tending to Prove that There May be Another Habitable World in the Moon, and Concerning the Possibility of A Passage Thither", London, 1640.
- Wilkins, N. P., and Moore, P. A., "The Moon", Faber, London, 1955.

b. ATLASES, CHARTS, DRAWINGS, MAPS, PHOTOGRAPHS, ETC.

Antonov, S., Bogomolov, K. S., Kirillov, N. I., and Uspenskii, V. I., "Photographic Processes Used in Making the First Photographs of the Far Side of the Moon", Translated by John Hopkins University, Applied Physics Laboratory, TG230-T282, Mar. 1962, 14 pp.

Arthur, D. G., "Some Lunar Sketches Made by D. G. Arthur at the Yerkes Observatory", British Astronomical Association. Journal, V. 70, 1960, p. 301-304.

Arthur, D. G., and Whitaker, E. A. (Compilers) and Kuiper, G. P. (Editor), "Orthographic Atlas of the Moon", (Supplement No. 1 to the Photographic Lunar Atlas), University of Arizona Press, Tucson, 1960.

Baldwin, R. B., "A Lunar Conture Map", Sky and Telescope, V. 21, 1961, p. 84-85.

Barabashov, N. P., "Results of Photometric Investigations of the Moon and the Planets at the Astronomical Observatory of Kharkov University", Kharkov, 1957.

Barabashov, N. P., Mikhailov, A. A., and Lipsky, Y. N., "Atlas of the Other Side of the Moon", Pergamon Press, New York, 1961, 141 pp.

Bogomolov, K. S., (see Antonov, S., 1962).

Breido, I. I., Markelova, A. A., and Schegloev, D. E., "Reliable Identification of Features on the Far Side of the Moon From the First Photographs", Translated by John Hopkins University, Applied Physics Laboratory, TG230-TG290, Apr. 1962, 18 pp.

Campan, C. F., "Mapping the Moon", Space World, V. 1, No. 6, 1961, p. 14-19.

Carder, R. W., "Phototopography for the 1-1,000,000 Lunar Charts", Photogrammetric Engineering, V. 27, No. 3, 1961, p. 386-390.

Fesenkov, "Photometric Peculiarities of the Moon", Soviet Astronomy-A.J., V. 4, No. 3, 1960, p. 468-472.

Hackman, R. J., "Photointerpretation of the Lunar Surface", Photogrammetric Engineering, Jun. 1961, p. 377-386.

Katz, A. H., "Analysis of Lunik III Photographs", Lunar and Planetary Exploration Colloquium. Proceedings, V. 2, No. 2, 1960, p. 27-44.

Kirillov, N. I., (see Antonov, S., 1962).

Klein, "Lunar Photographs Taken by the 36-inch Lick Telescope", Sirius, Mar. 1891.

Kuiper, G. P., (see Arthur, D. G., 1960).



Lipsky, Y. N., (see Barabashov, N. P., 1961).

Markelova, A. A., (see Breido, I. I., 1962).

Marth, A., "A List of Published Lunar Sketches and Photographs Arranged According to the Sun's Position", Royal Astronomical Society. Monthly Notices, V. 51, No. 3, 1891.

Mason, A. C., "Lunar Mapping", Military Engineer, V. 52, 1960, p. 62-63.

Mikhailov, A. A., (see Barabashov, N. P., 1961).

Mikhailov, A. A., "The First Map of the Far Side of the Moon", Akademiy Nauk SSSR. Vestnik, V. 31, 1961, p. 39-42, (Translated by NASA, TT-F-8083).

Minnaert, M. J., "Photometry of the Moon", The Solar System, V. 3, Planets and Satellites, edited by G. P. Kuiper, University of Chicago Press, Chicago, 1961, p. 213-248.

Mueller, K., "Studien An Mondphotographien", Leipzig, 1926.

Prinz, W., "New Photographs of the Moon Taken at the Mount Hamilton and Paris Observatories", Ciel et Terre, No. 19, Dec. 1890.

Riccioli, G. B., "Atmagestum Novum", Bologna, 1651.

Saunders, S. A., "The Determination of Selenographic Positions and the Measurement of Lunar Photographs", Royal Astronomical Society. Monthly Notices, V. 65, No. 5, 1905, p. 458-473.

Schmidt, J. J., "Charte der Gebirge des Mondes", Dietrich Reimer, Berlin, 1878.

Shcheglov, D. E., (see Breido, I. I., 1962).

Struve, O., "Photometry of the Moon", Sky and Telescope, V. 20, No. 2, 1960, p. 70-73.

USAF, "Lunar Reference Mosaic, LEM-1A", Scale 1-10,000,000, Aeronautical Chart and Information Center, 1960.

Uspenski, V. I., (see Antonov, S., 1962).

Webb, T. W., "Celestial Objects for Common Telescopes", London, 1859.

Weinek, L., "Drawings of the Moon", Astronomical Society of the Pacific, V. 2, No. 10, 1890.

Weinek, L., "Reply to the Criticism of M. M. Prinz Concerning my Lunar Drawings", Ciel et Terre, No. 24, Feb. 1891.

Whitaker, E. A., (see Arthur, D. G., 1960).

### c. CONFIGURATION AND INTERNAL STRUCTURE

Adams, A. N., and Bestul, S. M., "Meridian Observations of the Moon 1958-1959", *Astronomical Journal*, V. 66, 1961, p. 36.

Anonymous, "On the Rotation of the Moon", *Le Galilee*, Dec. 1890.

Bartels, J., and Fanselau, G., "Geophysical Lunar Almanac", *Terrestrial Magnetism and Atmospheric Electricity*, V. 43, No. 2, 1933, p. 155-158.

Benedikt, E. T., "Exact Determination of the Lunar Mass by Means of Selenoid Satellites", *Nature*, V. 192, 1961, p. 442-443.

Bestul, S. M., (see Adams, A. N., 1961).

Bolt, B. A., "Spheroidal Oscillations of the Moon", *Nature*, V. 188, p. 1176-1177.

Brown, E. W., "An Introductory Treatise on the Lunar Theory", Cambridge University Press, 1896, 292 pp.

Brown, E. W., "Theory of the Motion of the Moon, Containing a New Calculation of the Expressions For the Coordinates of the Moon in Terms of the Time - Part I", *Royal Astronomical Society. Memoirs*, V. 53, 1899, p. 39-116.

Brown, E. W., "Theory of the Motion of the Moon, Containing a New Calculation of the Expressions for the Coordinates of the Moon in Terms of the Time - Part 2", *Royal Astronomical Society. Memoirs*, V. 53, 1899, p. 163-202.

Brown, E. W., "Theory of the Motion of the Moon, Containing a New Calculation of the Expressions for the Coordinates of the Moon in Terms of the Time - Part 4", *Royal Astronomical Society. Memoirs*, V. 57, 1899, p. 51-145.

Brown, E. W., "Theory of the Motion of the Moon, Containing a New Calculation of the Expressions for the Coordinates of the Moon in Terms of the Time - Part 5", *Royal Astronomical Society. Memoirs*, V. 59, 1899, p. 1-103.

Cameron, W. S., and O'Keefe, J. A., "Evidence of Isotasy and Differentiation on the Moon", *Astronomical Journal*, V. 66, 1961, p. 280.

Cruls, L., "The Law According to Which the Sun's Distance to the Moon From Any Two Stars Varies as a Function of the Time", *Academie des Sciences. Comptes Rendus*, Tome CXI, No. 14, 1890.

Danes, Z. F., "Isostatic Compensation of Lunar Craters", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in *American Geophysical Union. Transactions*, V. 43, No. 4, Dec. 1962.

Duda, J. P., "Introduction to the Motions of the Moon", *Sperry Engineering Review*, V. 13, Dec. 1960, p. 19-25.

Fanslau, G., (see Bartels, J., 1933).

Fielder, G., "The Contraction and Expansion of the Moon", Planetary and Space Science, V. 8, 1961, p. 1-8.

Fielder, G., "Stress in the Moon", Planetary and Space Science, V. 5, No. 4, 1961, p. 286-287.

Franz, J. H., "Die Konstanten Der Physischen Libration", Koenigsberg, 1889.

Franz, J. H., "Die Figur Des Mondes", Astron. Beobachtungen Universitäts-Sternwarte 20 Königsberg, V. 38, No. 5, 1899, 33 pp.

Harrison, J. C., "An Analysis of the Lunar Tides", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Hevelius, J., "De Motu Lunae Libratorio", 1654.

Hill, G. W., "The Secular Variation of the Motion of the Moon's Perigee", Astronomical Journal, V. 10, No. 10-11, 1890.

Igor, A., "The Lunar Gravitational Potential", Advances in the Astronautical Sciences, V. 5, Plenum Press, New York, 1960, p. 320.

Kopal, Z., "Does the Moon Possess A Magnetic Field?", Space Journal, V. 2, No. 1, 1959, p. 3-8.

Kovach, R. L., (See Sutton, G. H., 1962).

Lamar, D. L., "Shape and Internal Structure of the Moon", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

MacDonald, G. J., "Seismic Activity of the Moon", Lunar and Planetary Exploration Colloquium. Proceedings, V. 2, 1960, p. 45-47.

Marth, A., "Ephemerides For Physical Observation of the Moon, 1891, Feb. 12-May 15", Royal Astronomical Society. Monthly Notices, V. 51, No. 3, 1891.

Marth, A., "Ephemerides For Physical Observation of the Moon, 1891", Royal Astronomical Society. Monthly Notices, V. 51, No. 6, 1891.

Mayer, T., "Abhandlung Ueber Die Umwälzung Des Mondes Um Seine Achse Und Die Scheinbare Bewegung Der Mondflecke", Nuremberg, 1748.

Morris, E. C., and Stephens, H. G., "Photographic Investigation of the Earth-Moon Libration Regions L-4 and L-5 From Mount Chacaltaya, Bolivia", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Neidell, N. S., (see Sutton, G. H., 1962).

Newton, I., "Principia", 1687.

O'Keefe, J. A., (see Cameron, W. S., 1961).

Orlov, A. J., "Determination of Lunar Geomagnetic Variations by Means of Accounting Machines", Moskva, Bulletin of the Academy of Sciences, No. 2, 1937, p. 195-206.

Perchot, J., "On The Movement of the Lunar Perigee", Academie des Sciences, Comptus Rendus, Tome 112, No. 19, 1891.

Stephens, H. G., (see Morris, E. C., 1962).

Stockwell, J. N., "The Theory of the Moon's Motion", Astronomical Journal, V. 10, No. 14-15, 1891.

Stockwell, J. N., "The Mean and Secular Motion of the Moon's Perigee", Astronomical Journal, V. 10, No. 18-21, 1891.

Sutton, G. H., Neidell, N. S., and Kovach, R. L., "Theoretical Tides on a Rigid Spherical Moon", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Wright, F. E., "Gravity on the Earth and on the Moon", Scientific Monthly, V. 24, 1927, p. 452.

#### d. ENVIRONMENT

(ATMOSPHERE, SURFACE TEMPERATURE, RADIATION, METEORITE FLUX, ETC.)

- Baldwin, J. E., "Thermal Radiation From the Moon and the Heat Flow Through the Lunar Surface", Royal Astronomical Society. Monthly Notices, V. 122, 1961, p. 513-522.
- Barasch, M. L., (see Weil, H., 1962).
- Boeddicker, O., "On the Changes of the Radiation of the Heat From the Moon", Dublin, 1887.
- Borough, H. C., (see Shorthill, R. W., 1960).
- Borst, L. B., (see Edwards, W. F., 1958).
- Boscovich, R., "De Lunae Atmosphaera", Rome, 1753.
- Brandt, J. C., "Density of the Lunar Atmosphere", Science, V. 131, 1960, p. 1606-1671.
- Broten, N. W., (see Medd, W. J., 1961).
- Conel, J. E., (see Speed, R. C., 1962).
- Conley, J. M., (see Shorthill, R. W., 1960).
- Costain, C. H., Ellsmore, B., and Whitfield, G. R., "Radio Observations of a Lunar Occultation of the Crab Nebula", Royal Astronomical Society. Monthly Notices, V. 116, 1955, p. 380-385.
- Dollfus, A., "Nouvelle Recherche D'Une Atmosphere Au Voisinage de la Lune", Academie Des Sciences. Comptes Rendus, V. 234, 1952, p. 2046-2049.
- Edwards, W. F., and Borst, L. B., "Possible Sources of a Luna Atmosphere", Science, V. 127, 1958, p. 325-328.
- Ellsmore, B., and Whitfield, G. R., "Lunar Occultation of a Radio Star and the Derivation of an Upper Limit for the Density of the Lunar Atmosphere", Nature, V. 176, 1955, p. 457-458.
- Ellsmore, B., (see Costain, C. H., 1955).
- Ellsmore, B., "Radio Observations of the Lunar Atmosphere", Philosophical Magazine, V. 2, 1957, p. 1040-1046.
- Euler, L., "Sur L'Atmosphere de la Lune", Berlin, 1748.
- Geoffrion, A. R., Korner, M., and Sinton, W. M., "Isothermal Contours of the Moon", Lowell Observatory Bulletin, No. 106, 1960, 15 pp.

Giraud, A., "A Study of Lunar Thermal Emission", University of Michigan Report 03544-1-T, Subcontract No. 33-S-101, Autometric Corporation, 1960, 35 pp.

Gold, T., "Magnetosphere of the Moon", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in *Astronomical Journal*, V. 67, No. 9, 1962, p. 571-590.

Green, J. (Chairman), "The Atmosphere of the Moon", Lunar and Planetary Exploration Colloquium. *Proceedings*, V. 3, No. 1, 1962, p. 51-68.

Grensted, F. F., "Airless and Waterless Conditions of the Moon", *Liverpool Astronomical Society. Journal*, V. 9, No. 3, 1891.

Herring, J. R., and Licht, A. L., "Effect of Solar Wind on the Lunar Atmosphere", *Science*, V. 30, 1959, p. 266.

Hinton, F. L., and Tausch, D. R., "A Model of the Lunar Atmosphere", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in *American Geophysical Union. Transactions*, V. 43, No. 4, Dec. 1962.

Jaeger, J. C., "Sub-Surface Temperatures on the Moon", *Nature*, V. 183, 1959, p. 1316.

Jastrow, R., "Lunar and Terrestrial Atmospheres", *Advances in the Astronautical Sciences*, V. 5, Plenum Press, New York, 1960, p. 338.

Korner, M., (see Geoffrion, A. R., 1960).

Kristenson, H., "The Lunar Contours at the Total Solar Eclipse of 1954, June 30", *Arkiv for Astronomi*, V. 1, 1954, p. 411-416.

Levin, B. Y., and Maeva, S. V., "Some Calculations of the Thermal History of the Moon", *American Institute of Physics*, V. 5, No. 4, 1961, p. 643-646.

Ley, W., "Why the Moon is Airless", *Philadelphia Evening Bulletin*, Sept. 15, 1959, p. 39.

Licht, A. L., (see Herring, J. R., 1959).

Lyon, R. P., (see Speed, R. C., 1962).

Maeva, S. V., (see Levin, B. Y., 1961).

Mayer, T., "Beweis Dass Der Mond Keinen Luftkreis Hat", Nuremberg, 1748.

Medd, W. J., and Broten, N. W., "Lunar Temperature Measurements at 3200 Mc/s", *Planetary and Space Science*, V. 5, No. 4, 1961, p. 307-313.

Mezger, P. S., and Strassl, H., "The Thermal Radiation of the Moon at 1420 Mc/s", *Planetary and Space Science*, V. 1, 1959, p. 213-226.

Minnett, H. C., (see Piddington, J. H., 1949).

Nicholson, S. B., (see Pettit, E., 1930).

Opik, E. J., and Singer, S. F., "Escape of Gases From the Moon", Journal of Geophysical Research, V. 65, 1960, p. 3065-3070.

Pael, S. E., "On The Evidence of Solar Heat Around the Moon's Equator", Liverpool Astronomical Society. Journal, V. 9, No. 2, 1890.

Pettit, E., and Nicholson, S. B., "Lunar Radiation Temperature", Astrophysical Journal, V. 71, 1930, p. 102-135.

Pettit, E., "Lunar Radiation As Related to Phase", Astrophysical Journal, V. 8, 1935, p. 17.

Pettit, E., "Radiation Measurements on the Eclipsed Moon", Astrophysical Journal, V. 91, 1940, p. 408-420.

Piddington, J. H., and Minnett, H. C., "Microwave Thermal Radiation From the Moon", Australian Journal of Scientific Research, V. 2, 1949, p. 63-77.

Ritchie, C. A., "The Moon's Supply of Atmosphere and Water", American Society of Naval Engineers. Journal, Aug. 1958, p. 435-437.

Shorthill, R. W., Borough, H. C., and Conley, J. M., "Enhanced Lunar Thermal Radiation During a Lunar Eclipse", Astronomical Society of the Pacific. Publications, V. 72, No. 429, 1960, p. 481-485.

Singer, S. F., (see Opik, E. J., 1960).

Sinton, W. M., "Taking the Temperature of the Moon and Planets", Astronomical Society of the Pacific. Leaflet 345, 1958.

Sinton, W. M., (see Geoffrion, A. R., 1960).

Sinton, W. M., "Temperatures on the Lunar Surface", Physics and Astronomy of the Moon, edited by Z. Kopal, Academic Press, New York and London, 1962, p. 413.

Speed, R. C., Conel, J. E., and Lyon, R. P., "Composition and Temperature Mapping of the Lunar Surface by Spectral Analysis of the Thermal Emission by an Orbiting Vehicle", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Strassl, H. (see Mezger, P. S., 1959).

Taeusch, D. R., (see Hinton, F. L., 1962).

Vestine, E. H., "Evolution and Nature of the Lunar Atmosphere", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 1, 1958, p. 19-23.

Vestine, E. H., "Evolution and Nature of the Lunar Atmosphere", Rand Research Memoranda 2106, 1958.

Weil, H., and Barasch, M. L., "Model of the Lunar Ionosphere", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in Astronomical Journal, V. 67, No. 9, 1962, p. 571-590.

Whitfield, G. R., (see Ellsmore, B., 1955).

Whitfield, G. R., (see Costain, C. H., 1955).



## e. EXPERIMENTAL RESEARCH

Althens, C. L., "Grundzuege Zur Gaenzlichen Ungestaltung der Bisherigen Geologie", Koburg, 1839.

Azmon, E., "Lunar Melting and Melting of Gabbro at High Pressures", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Bernett, E. C., Frink, E. P., Jaffe, L. D., Martens, H. E., and Scott, R. F., "The Bearing Capacity of Simulated Lunar Surfaces in Vacuum", Jet Propulsion Laboratory Technical Report No. 32-326.

Bernett, E. C., Wood, H. L., Jaffe, L. D., and Martens, H. E., "Thermal Properties of a Simulated Lunar Material in Air and in Vacuum", Jet Propulsion Laboratory Technical Report No. 32-368.

Frink, E. P., (see Bennett, E. C., 32-326).

Green, J., "Sonic Velocity in Possible Lunar Surface Materials", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 4, 1959, p. 26-32.

Halajian, J. D., "Laboratory Investigation of Moon-Soils", Grumman Aircraft Engineering Corporation, Report No. ADR-04-04-62.1, 1962, 61 pp.

Halajian, J. D., "Vehicle-Soil Mechanics on the Moon", Grumman Aircraft Engineering Corporation, Report No. ADR-04-04-62.2, 1962.

Hapke, B. W., "Second Preliminary Report on Experiments Relating to the Lunar Surface", Cornell University Center for Radiophysics and Space Research, Report CRSR-127.

Hapke, B. W., "A Theoretical Photometric Function for the Lunar Surface", Cornell University Center for Radiophysics and Space Research, Report CRSR-138, 1963.

Jaffe, L. D., (see Bennett, E. C., 32-326).

Jaffe, L. D., (see Bennett, E. C., 32-368).

Lawden, D. F., "The Simulation of Gravity", British Interplanetary Society. Journal, V. 16, No. 3, 1957, p. 134-140.

Martens, H. E., (see Bennett, E. C., 32-326).

Martens, H. E., (see Bennett, E. C., 32-368).

Rittenhouse, J. B., (see Roddy, D. J., 2713-62).

Rittenhouse, J. B., (see Roddy, D. J., 32-242).

Roddy, D. J., Rittenhouse, J. B., and Scott, R. F., "Dynamic Penetration Studies in Crushed Rock Under Atmospheric and Vacuum Conditions", ARS Preprint No. 2713-62.

Roddy, D. J., Rittenhouse, J. B., and Scott, R. F., "Dynamic Penetration Studies in Crushed Rock Under Atmospheric and Vacuum Conditions", Jet Propulsion Laboratory Technical Report No. 32-242.

Russell, J., "A Description of the Selenographia, An Apparatus for Exhibiting the Phenomena of the Moon", London, 1797.

Scott, R. F., (see Roddy, D. J., 2713-62).

Scott, R. F., (see Roddy, D. J., 32-242).

Scott, R. F., (see Bennett, E. C., 32-326).

Sjaastad, G. D., "Research on Frictional Behavior of Granular Systems", Unpublished PhD Thesis, Princeton University, New Jersey, 1963.

Wood, H. L., (see Bennett, E. C., 32-368).

#### f. EXPLORATION AND BASING CONCEPTS

- Anonymous, "Moonmobiles to Investigate Lunar Surface Before Man", *Ground Support Equipment*, V. 2, No. 6, Dec. 1960, p. 37-38.
- Barnes, J., "Scientific and Engineering Exploration of the Moon", *Vistas in Astronautics*, V. 2, 1959, p. 255-256.
- Bekker, M. G., "Land Locomotion on the Surface of Planets", *ARS Journal*, V. 32, No. 11, 1962, p. 1651-1659.
- Bolt, B. A., "Theoretical Phase Velocities for a Lunar Seismic Experiment", *Journal of Geophysical Research*, V. 66, No. 10, 1961, p. 3513.
- Brereton, R. G., "Lunar Exploration", *Geotimes*, V. 4, 1960, p. 8-9.
- Buwalda, P., (see Press, F., 1960).
- Cummings, C. I. (Chairman), "Lunar Exploration Vehicles", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 2, No. 3, 1961, p. 57-72.
- Cummings, C. I., "Ranger in the Lunar Program", *Astronautics*, V. 6, No. 9, 1961, p. 22, 52.
- Dileonardo, G., "Lunar Construction", *ARS Journal*, V. 32, No. 6, 1962, p. 973.
- Dryden, H. L., "Industry's Toughest Assignment, Make It Work", *Missiles and Rockets*, V. 9, No. 2, 1961, p. 41.
- Eimer, M. (Chairman), "Lunar Experiments-Physical and Biological", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 2, No. 3, 1961, p. 43-55.
- Eimer, M., "Measurement of Properties of the Moon from a Soft-Landed Vehicle", *Institute of Aerospace Science, Paper 61-111-1805*, 1961, 4 pp.
- Friend, J. L., "Problems of Lunar and Planetary Exploration", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 3, No. 1, 1962, p. 69-79.
- Gatland, K. W., "The Robot Explorers", *Spaceflight*, V. 2, 1960, p. 212-218.
- Green, J., "The Geo-Sciences Applied to Manned Lunar Exploration", *Space and Informations Systems Division, North American Aviation, Report SID 61-217*, 1961, 115 pp.
- Green, J., "Geology of the Lunar Base", *Journal of Geophysical Research*, V. 67, 1962, p. 1638-1639.
- Green, J., "The Significance of Terrestrial Analogs of Lunar Features of Lunar Basing", *Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in*

American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Greenfield, S. M., "Program of Lunar and Planetary Experiments", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 3, 1958, p. 31-33.

Hibbs, A. R. (Editor), "Exploration of the Moon, The Planets, and Interplanetary Space", Jet Propulsion Laboratory Report No. 30-1, California Institute of Technology, Pasadena, 1959.

Hibbs, A. R., "The National Program for Lunar and Planetary Exploration", Journal of Geophysical Research, V. 66, No. 7, 1961, p. 2003-2012.

Jastrow, R., "The Exploration of the Moon", Scientific American, V. 202, No. 5, 1960, p. 61-69.

Jastrow, R., "American Plans for Exploring the Moon With Instruments", New Scientist, V. 10, Jun. 1961, p. 702-705.

Johnson, M. H., "Experiments From a Lunar Vehicle", Vistas in Astronautics, V. 2, 1958.

Kaempfen, C. E., "Applications of Lunar Basing Practices to Terrestrial Shelters", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Kuiper, G. P., "The Exploration of the Moon", Vistas in Astronautics, V. 2, 1959, p. 273-314.

Moore, P. A., "The Lunar Objective", Spaceflight, V. 2, 1960, p. 209-211.

Neat, W. N., "Man on the Moon", Spaceflight, V. 2, 1960, p. 219-224.

Neugebauer, M., (see Press, F., 1960).

O'Day, M., "Power for a Lunar Colony", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 3, 1958, p. 11-14.

Oyama, V. I., Vango, S. P., and Wilson, E. M., "Application of Gas Chromatography to the Analyses of Organic Water and Absorbed Gases in the Lunar Crust", ARS Journal, V. 32, No. 3, 1962, p. 354-360.

Palmore, J. I., "Lunar Impact Probe", ARS Journal, V. 31, No. 8, 1961, p. 1066.

Pelterie, R. E., "Exploring the Moon by Rocket Ship", Modern Mechanics, Aug. 1931.

Press, F., Buwalda, P., and Neugebauer, M., "A Lunar Seismic Experiment", Journal of Geophysical Research, V. 65, 1960, p. 3097-3105.

Rinehart, J. S., "Basic Criteria for Moon Building", British Interplanetary Society. Journal, V. 17, No. 5, 1959, p. 126.

Rolan, G., "Lunar Support Equipment-The Time Is Now", Aerospace Engineering, V. 20, No. 12, 1961, p. 8.

Shoemaker, E. M., "Exploration of the Moon's Surface", American Scientist, V. 50, No. 1, 1962, p. 99-130.

Stephenson, L., "Making Measurements by Hard-Landing Vehicles", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 2, 1958, p. 19-20.

Thompson, G. E., "The Lunar Base", British Interplanetary Society. Journal, V. 10, Mar. 1951, p. 49-70.

Vango, S. P., (see Oyama, V. I., 1962).

Von Braun, W., "Man on the Moon, The Journey", Colliers, Oct. 18, 1952, p. 52.

Webb, J. E., "The Moon, America's Most Difficult Endeavor", Missiles and Rockets, V. 9, No. 22, 1961, p. 40.

Wilson, E. M., (see Oyama, V. I., 1962).

Yeh, L. P., "Use of Moon or Satellite Relays for Global Communications", AIEE Pacific General Meeting, San Diego, California, Aug. 8-12, p. 1043-1048.

Zwicky, F., "Some Possible Operations On the Moon", ARS Journal, V. 30, 1960, p. 1177-1180.

#### g. LUNAR-EARTH PHENOMENA

Appleton, E. V., and Weekes, K., "On Lunar Tides in the Upper Atmosphere", Royal Society. Proceedings, Series A, V. 171, 1939.

Bossolasco, M., (see Egedal, J., 1941).

Chambers, C., "On the Solar and Lunar Variations of Magnetic Declination At Bombay, Part 1", Royal Society. Proceedings, V. 17, 1869, p. 161-162.

Chambers, C., "On the Lunar Variations of Magnetic Declination at Bombay", Bombay Magnetical and Meteorological Observations, 1865-1870, Appendix 3, Bombay, 1872, p. 235-242.

Chambers, C., "On the Lunar Variation of Magnetic Declination at Bombay", Royal Society. Proceedings, V. 20, 1872, p. 135-136.

Chambers, C., "On the Luni-Solar Variations of Magnetic Declination and Horizontal Force at Bombay, and of Declination at Trevandrum", Royal Society. Proceedings, V. 40, 1886, p. 316.

Chambers, C., "Luni-Solar Variations of the Vertical Magnetic Force at Bombay for the Single Quarter, November 1875 to January 1876", British Association Report for 1887.

Chambers, C., "On the Luni-Solar Variations of Magnetic Declination and Horizontal Force at Bombay, and of Declination at Trevandrum", Royal Society of London. Philosophical Transactions, Series A, V. 178, 1887.

Chapman, S., "On the Lunar Diurnal Variation of the Earth's and Horizontal Force at Bombay, and of Declination at Trevandrum", Royal Society. Proceedings, V. 40, 1886, p. 316.

Chapman, S., "The Moon's Influence on the Earth's Magnetism", Terrestrial Magnetism and Atmospheric Electricity, V. 19, No. 1, 1914, p. 39-44.

Chapman, S., "On the Lunar Diurnal Variation of the Earth's Magnetism at Pavlovsk and Pola (1897-1903)", Royal Society of London. Philosophical Transactions, Series A, V. 215, 1915, p. 161-176.

Chapman, S., "The Lunar Diurnal Magnetic Variation and Its Change With Lunar Distance", Royal Society of London. Philosophical Transactions, Series A, V. 215, 1915, p. 161-176.

Chapman, S., "The Influence of Solar Activity of the Lunar-Diurnal Magnetic Variation", Terrestrial Magnetism and Atmospheric Electricity, V. 22, No. 2, 1917, p. 87-91.

Chapman, S., "On the Influence of Lunar Declination on the Lunar-Diurnal Variation of Magnetic Declination at Zikawei", Terrestrial Magnetism and

Atmospheric Electricity, V. 22, No. 3, 1917, p. 121-124.

Chapman, S., "The Influence of Changes in Distance Upon the Lunar-Diurnal Magnetic Variation", Terrestrial Magnetism and Atmospheric Electricity, V. 23, No. 1, 1918, p. 25-28.

Chapman, S., "The Solar and Lunar Diurnal Variations of Terrestrial Magnetism", Royal Society of London. Philosophical Transactions, Series A, V. 218, 1919, p. 1-118.

Chapman, S., "The Lunar-Diurnal Magnetic Variation at Greenwich and Other Observatories", Royal Society of London. Philosophical Transactions, Series A, V. 225, No. 627, 1925, p. 49-91.

Chapman, S., "The Lunar Tide in the Earth's Atmosphere", Royal Society Proceedings, Series A, V. 151, No. 872, 1935, p. 105-117.

Chapman, S., "The Lunar Atmospheric Tides Over Canada, 1897-1932", Royal Meteorological Society of London. Quarterly Journal, V. 61, No. 261, 1935, p. 359-366.

Chapman, S., "The Lunar Atmospheric Tide in the Azores, 1894-1932", Royal Meteorology Society of London. Quarterly Journal, V. 62, No. 263, 1936, p. 41-45.

Chapman, S., Hardman, M., and Miller, J. P., "The Lunar Atmospheric Tide At Melbourne, 1869-1892, 1900-1914", Royal Meteorological Society of London. Quarterly Journal, V. 52, No. 267, 1936, p. 540-551.

Chapman, S., "The Lunar Atmospheric Tide at Glasgow", Royal Society of Edinburgh. Proceedings, V. 56, Pt. 1, 1936, p. 1-5.

Chapman, S., "The Lunar Atmospheric Tide at Accra, Gold Coast, Africa", Royal Meteorology Society of London. Quarterly Journal, V. 64, No. 276, 1938, p. 523-524.

Chapman, S., and Miller, J. P., "The Statistical Determination of Lunar Daily Variations in Geomagnetic and Meteorological Elements", Royal Astronomical Society. Monthly Notices, Geophysics Supplement, V. 4, 1940, p. 649-669.

Chapman, S., "Notes on the Lunar Geomagnetic Tide. 1 - It's Mathematical and Graphical Representations, and Their Significance", Terrestrial Magnetism and Atmospheric Electricity, V. 47, No. 4, 1942, p. 279-294.

Egedal, J., "The Lunar-Diurnal Magnetic Variation and It's Relation to the Solar-Diurnal Variation", Terrestrial Magnetism and Atmospheric Electricity, V. 31, No. 4, 1926, p. 193-199.

Egedal, J., "The Lunar-Diurnal Magnetic Variation and It's Relation to the Solar-Diurnal Variation", Terrestrial Magnetism and Atmospheric Electricity, V. 32, No. 3, 1927, p. 139-141.

Egedal, J., "On the Lunar-Diurnal Variation in the Earth-Currents", Terrestrial Magnetism and Atmospheric Electricity, V. 42, No. 2, 1937, p. 179-182.

Egedal, J., and Bossolasco, M., "The Lunar-Diurnal Variation of the Horizontal and Vertical Magnetic Forces at the Polar-Year Station Mogadiscio", *Terrestrial Magnetism and Atmospheric Electricity*, V. 46, No. 1, 1941, p. 59-60.

Figee, S., "The Influence of the Moon on the Magnetic Needle, at Batavia, From Observations Made from April 1883 to March 1899", Batavia, 1905.

Hardman, M., (see Chapman, S., 1936).

Johnson, J. J., (see Stetson, H. T., 1934).

Miller, J. P., (see Chapman, S., 1936).

Miller, J. P., (see Chapman, S., 1940).

Omori, F., "Note on the Lunar-Daily Distribution of Earthquakes", Earthquake Investigation Committee, Publications in Foreign Languages, No. 18, Tokyo, 1904.

Robb, R. A., and Tannahill, T. R., "The Lunar Atmospheric Pressure Inequalities at Glasgow", Royal Society of Edinburgh. *Proceedings*, V. 56, Pt. 1, 1936, p. 91-96.

Robb, R. A., and Tannahill, T. R., "Lunar Atmospheric Pressure Variations at Glasgow", Royal Society of Edinburgh. *Proceedings*, V. 59, 1939, p. 81-90.

Rooney, W. J., "Lunar-Diurnal Variation In Earth-Currents at Huancayo and Tucson", *Terrestrial Magnetism and Atmospheric Electricity*, V. 43, No. 2, 1938, p. 107-118.

Sanford, F., "Observations on Solar and Lunar-Diurnal Variations of Earth Potential Due to Changes in Distribution of the Earth's Surface-Charge, Including Two New Methods of Recording Such Variations, and on the Accompanying Variations in the Atmospheric Potential-Gradient for the Year 1927", *Terrestrial Electronics Observations, Bulletin*, V. 5, 1928, 26 pp.

Schneider, O., "The Variability of Lunar Magnetic Variations", *Terrestrial Magnetism and Atmospheric Electricity*, V. 46, No. 3, 1941, p. 283-300.

Stetson, H. T., "On the Correlation of Radio Reception With the Moon's Position in the Observer's Sky", *Terrestrial Magnetism and Atmospheric Electricity*, V. 36, No. 1, 1931, p. 1-5.

Stetson, H. T., and Johnson, J. J., "On the Possibilities of a Tidal Effect in the Kennelly-Heaviside Layer as Evidenced by a Correlation of the Intensity of Radio Reception With Positions of the Moon", *Terrestrial Magnetism and Atmospheric Electricity*, V. 39, No. 2, 1934, p. 145-158.

Tannahill, T. R., (see Robb, R. A., 1936).

Tannahill, T. R., (see Robb, R. A., 1939).

Thomson, A., "Lunar Atmospheric Tides Over Canada", Royal Astronomical Society of Canada. *Journal*, V. 29, No. 10, 1935, p. 375-380.



Weekes, K., (see Appleton, E. V., 1939).

#### h. LUNAR TRAJECTORIES AND ASSOCIATED PROBLEMS

Anonymous, "Lunik II's Landing on the Moon", Sky and Telescope, V. 20, 1960, p. 265.

Brumberg, V. A., Kirkichnikov, S. N., and Chebotarev, G. A., "Orbits of Artificial Moon Satellites", Soviet Astronomy-A.J., V. 5, No. 1, 1961, p. 95-105.

Buckheim, R. W., "Lunar Flight Trajectories", Rand Corporation, Paper P-1268, Jan. 1958, 49 pp.

Buckheim, R. W., and Lieske, H. A., "Lunar Flight Dynamics", Rand Corporation, Paper P-1433, Aug. 1958.

Buckheim, R. W., "Lunar Flight Trajectories", Space Technology, Edited by H. Seifert, John Wiley and Sons, 1959.

Burley, R. R., (see Weber, R. J., 1961).

Burley, R. R., and Weber, R. J., "Lunar Takeoff", ARS Journal, V. 32, No. 8, 1962, p. 1296.

Campbell, J. W., "Rocket Flight to the Moon", Philosophical Magazine, V. 31, Ser. 7, 1941.

Chebotarev, G. A., (see Brumberg, V. A., 1961).

Cheng, R. K., and Pfeffer, I., "A Terminal Guidance System for Soft Lunar Landing", Preprint 1912-61, American Rocket Society Guidance, Control and Navigation Conference, Stanford University, Aug. 7-9, 1961.

Clarke, V. C., "Design of Lunar and Interplanetary Ascent Trajectories", California Institute of Technology, Jet Propulsion Laboratory, TR 32-30, Mar. 1962, 16 pp.

Colombo, G., and Lautman, D. A., "Some Singular Orbits of an Earth-Moon Satellite With a High Area-Mass Ratio", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in Astronomical Journal, V. 67, No. 9, 1962, p. 571-590.

Crenshaw, J. W., (see Michael, W. H., 1961).

Darlington, S., "Guidance and Control of Unmanned Soft Landings on the Moon", Planetary and Space Science, V. 7, 1961, p. 70-75.

Egorov, V. A., "Problems on the Dynamics of Flight to the Moon", The Russian Literature of Satellites, Pt. 1, New York, 1958

Gallagher, A. E., and Ingelse, A. O., "Drop Tests Prove Out Inflatable Lunar Decelerator", Space Aeronautics, V. 36, No. 4, 1961, p. 69 and 71.

Gold, T., "Anisotropy of Escape Velocity From the Moon, The Lunar Atmosphere and the Origin of Craters", Astronautical Sciences. Journal, V. 7, 1960, p. 23-24.

Hakes, R. C., "Guidance and Navigation Systems for Lunar Mission", Reprint 2294-61, American Rocket Society Space Flight Report to the Nation, New York, Oct. 9-15, 1961.

Hefferlin, R. A., "Is Rocket Contact With the Moon Possible?", American Rocket Society. Journal, V. 16, No. 65, 1946, p. 31-32.

Hiller, H., "A Generalized Study of Two-Dimensional Trajectories of a Vehicle in Earth-Moon Space", Astronautica Acta, V. 8, 1962, p. 82-105.

Huang, S. S., "A Preliminary Study of the Orbits of Merit for Moon Probe", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in Astronomical Journal, V. 67, No. 2, 1962, p. 109-124.

Ingelse, A. O., (see Gallagher, A. E., 1961).

Kirkichnikov, S. N., (see Brumberg, V. A., 1961).

Kriegsman, B. A., and Reiss, M. H., "Terminal Guidance and Control Techniques For Soft Lunar Landing", ARS Journal, V. 32, No. 3, 1962, p. 401-413.

Lally, E., "Flexible Guidance Needed for Soft Planet Landings", Space Aeronautics, V. 35, Apr. 1961, p. 137-138, 140, 142, 144.

Lautman, D. A., (see Colombo, G., 1962).

Ley, W., "Rocket to the Moon", Mechanix Illustrated, Sept. 1945.

Lieske, H. A., "Lunar Trajectory Studies", Rand Corporation, Paper P-1293, Feb. 1958, 36 pp.

Lieske, H. A., (see Buckheim, R. W., 1958).

Michael, W. H., and Crenshaw, J. W., "Trajectory Considerations for Circumlunar Missions", IAS, 29th Annual Meeting, New York, Jan. 23-25, 1961, Paper 61-35, 22 pp.

Miller, Q. K., (see Queijo, M. J., 1962).

Palmore, J. I., "Lunar Impact Problem", ARS Journal, V. 31, No. 8, 1961, p. 1066-1073.

Pauson, W. M., (see Weber, R. J., 1961).

Pendray, G. E., "Rockets to the Moon", Elks Magazine, Oct. 1931.

Pfeffer, I., (see Cheng, R. K., 1961).

Pittman, C. W., (see Schroeder, W., 1961).

Quarles, G. G., "Lunar GSE Demands Compatability", Ground Support Equipment, V. 12, No. 6, 1960, p. 31-33.

Queijo, M. J., Riley, D. R., and Miller, Q. K., "A Fixed-Base-Simulator Study of the Ability of a Pilot to Establish Close Orbits Around the Moon and to Perform Soft Lunar Landings", Institute of Aerospace Science, Paper 62-13, Jan. 1962, 16 pp.

Raytheon Company, "Preliminary Lunar Landing Terminal Guidance Study", Raytheon Company, Report BR-1249A, Jun. 1961.

Reiss, M. H., (see Kriegsman, B. A., 1962).

Riley, D. R., (see Queijo, M. J., 1962).

Rinehart, J. S., "Stresses Associated With Lunar Landings", British Interplanetary Society. Journal, V. 17, Nov.-Dec. 1960, p. 431-436.

Schroeder, W., and Pittman, C. W., "A Guidance Technique For Interplanetary and Lunar Vehicles", Planetary and Space Science, V. 7, Jul. 1961, p. 64-69.

Shute, B. E., "A Cislunar Orbit (IMP)", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in Astronomical Journal, V. 67, No. 5, 1962, p. 267-286.

Small, L. W., "Possibility of Aerodynamic Descent on the Moon", Jet Propulsion, V. 28, No. 11, 1958, p. 765.

Stehling, K. R., "Landing on the Moon", Space Aeronautics, V. 33, No. 2, 1960, p. 42-45.

Stuhlinger, E., "Lunar Ferry With Electric Propulsion System", in 1st International Symposium on Rockets and Astronautics, Tokyo, 1959, 393 pp.

Tolson, R. H., "Maximum Latitudes of Lunar Landing Sites", ARS Journal, V. 32, No. 7, 1962, p. 1091-1092.

Tombaugh, C., "Where to Land on the Moon", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 3, 1958, p. 15-19.

Tross, C., "Lunar Landing Sites, Selection", ARS Journal, V. 31, No. 8, 1961, p. 1153-1155.

Tross, C., "Lunar Vehicle Orbit Determination", ARS Journal, V. 32, 1962, p. 576-581.

Weber, R. J., Pauson, W. M., and Burley, R. R., "Lunar Trajectories", NASA TN D-866, Aug. 1961, 67 pp.

Weber, R. J., (see Burley, R. R., 1962).

Wilcox, A., "Moon Rocket", Thomas Nelson and Sons, London, 1946, 161 pp.

Zukerman, A., "Asymptotic Expansions of the Solutions of the Equations of Motion in the Earth-Moon Space", IAS, 29th Annual Meeting, New York, Jan. 23-25, 1961, Paper 61-8, 29 pp.

## 1. SURFACE MATERIALS

Amenitskiĭ, N. A., Noskova, R. I., and Salomonovich, A. E., "Radio Image of the Moon at 8mm", Soviet Astronomy - A. J., V. 4, 1960, p. 177-179.

Anonymous, "Lunar Reflection of UHF Communications", Franklin Institute. Journal, V. 253, 1952, p. 70-71.

Anonymous, "Lunar Reflections of UHF Communications", Technical News Bulletin, V. 36, 1952, p. 35.

Arnold, J. R., "Gamma Ray Spectroscopy of the Moon's Surface", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 3, 1958, p. 28-31.

Barabashov, N. P., and Chekirda, A. T., "A Study of the Rocks Most Closely Resembling the Surface Constituents of the Moon", Soviet Astronomy - A. J., V. 3, 1960, p. 827-831.

Boeddicker, O., "Lunar Radiant Heat", Dublin, 1891.

Brandt, J. C., and Hodge, R. W., "Lunar Dust and the Gegenschein", Nature, V. 192, No. 4806, 1961, p. 957.

Brereton, R. G., "Lunar Dust", Aerojet-General Report 1876, Sep. 1960.

Brereton, R. G., "Meteoritic Dust on the Surface of the Moon", ARS Journal, V. 31, No. 6, 1961, p. 850.

Briggs, B. H., "Roughness of the Moon as a Radar Reflector", Nature, V. 187, 1960, p. 490.

Brown, H., (see Watson, K., 1961).

Brown, W. E., "A Lunar and Planetary Echo Theory", Journal of Geophysical Research, V. 65, 1960, p. 3087-3095.

Browne, I. C., Evans, J. V., Hargreaves, J. K., and Murray, W. A., "Radio Echoes From the Moon", Physical Society. Proceedings, Series B, V. 69, 1956, p. 901-920.

Brunschwig, M., et al., "Estimation of the Physical Constants of the Lunar Surface", University of Michigan Report No. 3544-1-F, Subcontract No. 133-S-101, Autometric Corporation, 1960, 79 pp.

Buettner, K. K., "The Lunar Skin, Dusty or Porous", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Chekirda, A. T., (see Barabashov, N. P., 1960).

Coates, R. J., "The Lunar Brightness Distributions at 4.3mm Wave Length", *Astronomical Journal*, V. 64, 1959, p. 326.

Cowie, D. B., (see Lederberg, J., 1958).

Coyne, G. V., "Comparative Spectrophotometry of Selected Areas on the Lunar Surface", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in *Astronomical Journal*, V. 67, No. 9, 1962, p. 571-590.

Daniels, F. B., "A Theory of Radar Reflection From the Moon and Planets", *Journal of Geophysical Research*, V. 66, 1961, p. 1781-1788.

Dyce, R. B., (see Leadabrand, R. L., 1960).

Evans, J. V., (see Browne, I. C., 1956).

Evans, J. V., "Radio-Echo Observations of the Moon at 3.6 cm Wavelength", Technical Report No. 256, Lincoln Laboratory, Massachusetts Institute of Technology, 1962, 38 pp.

Fensler, W. E., Senior, T. A., and Siegel, K. M., "Exploring the Depth of the Surface Layer of the Moon From A Radar Space Observatory", *Aerospace Engineering*, V. 18, 1959, p. 38-41.

Fredriken, R. F., (see Leadabrand, R. L., 1960).

Gibson, J. E., "Lunar Surface Characteristics Indicated by the March 1960 Eclipse and Other Observations", *Astrophysical Journal*, V. 133, 1962, p. 1072-1080.

Giraud, A., (see Senior, T. A., 1962).

Gold, T., "Dust on the Moon", *Vistas In Astronautics*, edited by M. Alperin and N. F. Gregory, V. 2, Pergamon Press, New York, 1959, p. 261.

Gold, T., "Processes on the Lunar Surface", *Proceedings of the I.A.U.*, Pulkovo Meeting, edited by Z. Kopal and Z. Michailova, 1960.

Goldberg, E. D., "X-ray Techniques for Probing the Lunar Surface", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 5, 1959, p. 19-21.

Grannis, P. D., "Electrostatic Erosion Mechanisms on the Moon", *Journal of Geophysical Research*, V. 66, 1961, p. 4293-4299.

Green, J., "The Physical Characteristics of the Lunar Surface", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 1, 1958, p. 11-15.

Green, J., "Geochemical Implications of Lunar Degassing", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 4, 1959, p. 1-18.

- Green, J., "The Geology of the Lunar Base", Space and Information Systems Division, North American Aviation, Incorporated, Report SID61-358, 1961, 127 pp.
- Hagfors, T., "Some Properties of Radio Waves Reflected From the Moon and Their Relation to the Lunar Surface", Journal of Geophysical Research, V. 66, 1961, p. 777-786.
- Hargreaves, J. K., (see Browne, I. C., 1956).
- Hodge, R. W., (see Brandt, J. C., 1961).
- Hughes, V. A., "Roughness of the Moon as a Radar Reflector", Nature, V. 186, 1960, p. 873-874.
- Lambert, J. H., "Photometria Sive De Mensura et Gradibus Luminis, Colorum et Umbrae", Augsburg, 1760.
- Landerer, J. J., "Sur la Polarization de la Lumiere Lunaire", Paris, 1889.
- Leadabrand, R. L., Dyce, R. B., Fredriksen, R. F., Presnell, R. I., and Schlobonn, J. C., "Evidence That the Moon is a Rough Scatterer at Radio Frequencies", Journal of Geophysical Research, V. 65, 1960, p. 3071-3078.
- Lederberg, J., and Cowie, D. B., "Moon Dust", Science, V. 127, No. 3313, 1958, p. 1437-1475.
- Marshall, C. H., "Thickness of the Procellarian System, Letronne Region of the Moon", U. S. Geological Survey, Professional Paper 424-O, 1961, p. D-208-211.
- Murray, B. C., (see Watson, K., 1961).
- Murray, W. A., (see Browne, I. C., 1956).
- Noskova, R. I., (see Amenitskii, N. A., 1960).
- Opik, E., "Surface Properties of the Moon", Progress in the Astronautical Sciences, edited by S. F. Singer, North-Holland Publishing Company, Amsterdam, 1962, p. 219-260.
- Peal, S. E., "Lunar Surfacing by Seas and Lakes of Molten Lava", Liverpool Astronomical Society. Journal, V. 9, No. 1, 1890.
- Presnell, R. I., (see Leadabrand, R. L., 1960).
- Press, F., "The Geological Aspects of the Interior of the Moon", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 1, 1958, p. 15-18.
- Ranyard, A. C., "Is the Moon Covered With Ice", Knowledge, Dec. 1890.
- Rosse, "Measurements on the Polarization of Light From the Moon", Dublin, 1878.



- Ryan, J. A., "Some Predictions as to the Nature and Behavior of the Lunar Soils", First International Conference on Mechanics of Soil-Vehicle Systems. Proceedings, Minerva Technica, Turin, Italy, 1961.
- Salisbury, J. W., and Van Tassel, R., "State of the Lunar Dust", Astronomical Society of the Pacific. Publications, V. 74, No. 438, 1962, p. 245-247.
- Salisbury, J. W., "Lunar Surface Characteristics", Paper Presented at the Automotive Engineering Congress, Detroit, Michigan, 14-18 Jan. 1963.
- Salomonovich, A. E., (see Amenitskii, N. A., 1960).
- Schlobonn, J. C., (see Leadabrand, R. L., 1960).
- Senior, T. A., (see Fensler, W. E., 1959).
- Senior, T. A., Siegel, K. M., and Giraud, A., "Some Physical Constants of the Lunar Surface as Indicated by its Radar Scattering and Thermal Emission Properties", Preprint, IAU Symposium No. 11, Leningrad, (1960), Cambridge, 1962.
- Sharonov, V. V., "A New Russian View About the Moon's Surface", The New Scientist, V. 6, No. 150, 1959, p. 564.
- Siegel, K. M., (see Fensler, W. E., 1959).
- Siegel, K. M., (see Senior, T. A., 1962).
- Sytinskaya, N. N., "A Composite Catalogue of Absolute Values of the Visual Reflecting Power of Lunar Objects", Astronomicheskii Zhurnal, V. 30, No. 3, 1953, p. 295-301.
- Sytinskaya, N. N., "New Data on the Meteoric Slag Theory of the Formation of the Outer Layer of the Lunar Surface", Soviet Astronomy-A.J., V. 3, 1959, p. 310-314.
- Sytinskaya, N. N., "Probable Dimensions of Microfeatures of the Lunar Surface", ARS Journal, V. 32, No. 3, 1962, p. 488-489.
- Teifel, V. G., "On the Difference in the Spectral Properties of Areas on the Lunar Surface", Soviet Astronomy-A. J., V. 3, 1960, p. 955-959.
- Troitskii, V. S., "Nature and Physical State of the Surface Layer of the Moon", Soviet Astronomy-A. J., V. 6, 1962, p. 51-54.
- Van Tassel, R., (see Salisbury, J. W., 1962).
- Walter, L. S., "Lunar Magmatic Differentiation", Abstract of Paper Presented at the Second Western-National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union, Transactions, V. 43, No. 4, Dec. 1962.

Watson, K., Murray, B. C., and Brown, H., "On the Possible Presence of Ice on the Moon", Journal of Geophysical Research, V. 66, 1961, p. 1598-1600.

Wehner, G. K., "Sputtering Effects on the Moon's Surface", ARS Journal, V. 31, Mar. 1961, p. 438-439.

Wesselink, A. J., "Heat Conductivity and the Nature of the Lunar Surface Material", Astronomical Institute of the Netherlands. Bulletin, V. 10, 1948, p. 351.

Whipple, F. L., "On the Lunar Dust Layer", Vistas in Astronautics, V. 2, 1959, p. 267-272.

## j. TOPOGRAPHICAL FEATURES

- Aikens, R., Powers, W., and Hynek, J. A., "High Contrast Electronic Imageorthicon Techniques Applied to the Lunar Surface", *Astronomical Journal*, V. 66, 1961, p. 277.
- Alter, D., "The Crater Linne", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 3, 1958, p. 33-38.
- Alter, D., "The Alphonsus Story", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 4, 1959, p. 19-22.
- Alter, D., "Obscurations of Lunar Features", *News Release From the National Academy of Science, National Research Council*, Apr. 1959.
- Alter, D., "The Nature of Lunar Maria", *Astronomical Society of the Pacific. Publications*, V. 68, p. 38-45.
- Alter, D., "The Nature of the Lunar Rays", *The Griffith Observer*, V. 25, 1961, p. 142-154.
- Anonymous, "The Lunar Crater Linne", *British Astronomical Association. Journal*, V. 71, 1961, p. 36.
- Ashbrook, J., "Linne in Fact and Legend", *Sky and Telescope*, 1960, p. 87-88.
- Ashbrook, J., "The Lunar Straight Wall", *Astronomical Society of the Pacific. Publications*, V. 72, 1960, p. 55-58.
- Beard, D. P., "The Impact Origin of the Moon's Craters", *Popular Astronomy*, V. 25, 1917, p. 167.
- Beer, M., and Maedler, J. H., "Der Mond Oder Allgemeine Vergleichende Selenographic", Berlin, 1837.
- Blagg, M. A., "Collated List of Lunar Formations", Edinburgh, 1913.
- Brereton, R. G., "The Lunar Surface", *Geotimes*, V. 6, No. 2, 1961, p. 22-26.
- Brown, H., (see Pohn, H., 1962).
- Cameron, W. T., (see O'Keefe, J. A., 1960).
- Carpenter, J., (see Nasmyth, J., 1874).
- Chemla-Lamech, F., "Carte Topographique de la Lune", Toulouse, 1934.
- Chemla-Lamech, F., "Etude Monographique des Plus Grandes Formations Lunaires", Toulouse, 1935.

- Cohen, A. J., "Megashatter Cone Hypothesis of the Origin of Lunar Volcanoes", *Nature*, V. 192, 1961, p. 346.
- Copeland, J., (see Tyler, W. C., 1962).
- Delmotte, G., "Recherches Selenographiques et Nouvelle Theorie des Criques Lunaries", Paris, 1923.
- Ebert, "On the Ringed Mountains of the Moon", *Sirius*, Jan. 1891.
- Ebert, "On the Origin of the Circular Mountains on the Moon", *Himmil and Erde*, No. 4-5, Jan.-Feb. 1891.
- Eggleton, R. E., and Marshall, C. H., "Preimbrian History of the Lunar Surface", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.
- Elger, T. G., "The Moon Surveyed in Common Telescopes", *Liverpool Astronomical Society. Journal*, 1886-1890.
- Elger, T. G., "Selenographical - Phocylides, Wargentini, Etc.", *English Mechanic*, V. 53, No. 1361-1364, 1891.
- Elger, T. G., "The Moon, A Full Description and Map of Its Principal Physical Features", George Philip and Son, London, 1895.
- Fauth, P., "A New View of the Formation of Lunar Craters", *Sirius*, May 1891.
- Fielder, G., "A Theory of the Origin of Lunar Rills", *Sky and Telescope*, V. 19, 1960, p. 334-337.
- Fielder, G., "Ptolemaeus A and the Floor of Ptolemaeus", *British Astronomical Association. Journal*, V. 70, 1960, p. 190-194.
- Fielder, G., "On the Origin of Lunar Rays", *Astrophysical Journal*, V. 134, 1961, p. 425-434.
- Fielder, G., "Ray Elements and Secondary Impact Craters on the Moon", *Astrophysical Journal*, V. 135, No. 2, 1962, p. 632-637.
- Firsoff, V. A., "Surface of the Moon", Hutchinson, London, 1961, 128 pp.
- Franz, J. H., "Die Randlandschaften des Mondes", 1913.
- Fremelin, J. H., "Volcanoes on the Moon", *Nature*, V. 183, 1959, p. 239.
- Galilei, G., "Sidereus Nuntius", Venice, 1610.
- Gault, D. E., Shoemaker, E. M., and Moore, H. J., "The Flux and Distribution of Fragments Ejected from the Lunar Surface by Meteoroid Impact", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

- Giamboni, L., "Lunar Rays-Their Formation and Age", *Astrophysical Journal*, V. 130, 1959, p. 324-335.
- Gibson, J. E., "Lunar Surface Characteristics Indicated by the March, 1960 Eclipse and Other Observations", *Astrophysical Journal*, V. 133, 1961, p. 1072-1080.
- Gifford, A. C., "The Mountains of the Moon", *New Zealand Journal of Science and Technology*, V. 7, 1924, p. 129-142.
- Gilbert, G. K., "The Face of the Moon, A Study of the Origin of its Features", *Washington Philosophical Society. Bulletin*, V. 12, 1893, p. 241-292.
- Gilvarry, J. J., and Hill, J. E., "The Impact Theory of the Origin of Lunar Craters", *Astronomical Society of the Pacific. Publications*, V. 68, 1956, p. 223-229.
- Gilvarry, J. J., "Nature of the Lunar Surface", *Nature*, V. 180, 1957, p. 911-912.
- Gilvarry, J. J., "Origin and Nature of Lunar Surface Features", *Nature*, V. 188, 1960, p. 886-890.
- Gold, T., "The Lunar Surface", *Royal Astronomical Society. Monthly Notices*, V. 115, No. 6, 1955.
- Gold, T., "The Surface of the Moon", *Lecture, American Rocket Society, Princeton University*, 1962.
- Goodacre, W., "The Moon With a Description of Its Surface Features", *Bournemouth*, 1931.
- Green, J., "Comparison of Lunar and Terrestrial Surface Features", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 5, 1959, p. 2-3.
- Green, J., and Poldervaart, A., "Lunar Defluidization and Its Implications", *International Geological Congress, Report of the Twenty-First Session, Pt. 2*, 1960, p. 17-18.
- Gruithuisen, F., "Der Mond und Seine Natur", *Munich*, 1844.
- Guenther, S., "Vergleichende Mond Und Erdkunde", *Braunschweig*, 1911.
- Hacker, S. G., and Stewart, J. Q., "Remarks on the Lunar Ray Craters", *Astrophysical Journal*, V. 81, 1935, p. 37-44.
- Harper, A. F., (see Jaeger, J. C., 1950).
- Hevelius, J., "Selenographia Sive Lunae Descriptio", *Danzig*, 1647, 563 pp.
- Hill, J. E., (see Gilvarry, J. J., 1956).
- Hynek, J. A., (see Aikens, R., 1961).

- Jaeger, J. C., and Harper, A. F., "Nature of the Surface of the Moon", *Nature*, V. 166, 1950, p. 1026.
- Kellogg, W. W. (Chairman), "Earth Sciences Session", Lunar and Planetary Exploration Colloquium. *Proceedings*, V. 2, No. 1, 1959, p. 15-33.
- Kepler, J., "Somnium Seu de Astronomia Lunari", 1634.
- Kozyrev, N. A., "Observation of a Volcanic Process on the Moon", *Sky and Telescope*, V. 18, 1959, p. 184-186.
- Kreiter, T. J., "Dating Lunar Surface Features by Using Crater Frequencies", *Astronomical Society of the Pacific. Publications*, V. 72, 1960, p. 393-398.
- Kreiter, T. J., "A Possible Method of Dating the Lunar Surface Features", *Jet Propulsion Laboratory Technical Release No. 34-57*, 1960.
- Kuiper, G. P., "On the Origin of the Lunar Surface Features", *National Academy of Sciences. Proceedings*, V. 40, No. 12, 1954, p. 1096-1112.
- Kuiper, G. P., "The Surface Structure and History of the Moon", *Lecture, Space Technology Laboratories, Redondo Beach, California*, V. 1, No. 9, 1961.
- Lenham, A. P., "The Copernician Ray System", *British Astronomical Association. Journal*, V. 65, 1955, p. 241-246.
- Liu, S., "Normal Lunar Impact Analysis", *Journal of Astronautical Science*, V. 7, 1960, p. 35-39.
- MacDonald, T. L., "Studies in Lunar Statistics", *British Astronomical Association. Journal*, V. 39-50, 1929-1940.
- MacVey, J. W., "Craters of the Moon", *Spaceflight*, V. 3, Jan. 1961, p. 13-15.
- Maedler, J. H., (see Beer, M., 1837).
- Marshall, B. K., "The Origin of the Lunar Craters, A Summary", *Popular Astronomy*, V. 51, 1953, p. 415-424.
- Marshall, C. H., (see Eggleton, R. E., 1962).
- Mason, A. C., "Lunar Terrain Study", *Military Engineer*, V. 52, 1960, p. 144.
- McGillen, C. D., and Miller, B. P., "Lunar Surface Roughness from Crater Statistics", *Journal of Geophysical Research*, V. 67, 1962, p. 4787-4794.
- Miller, B. P., (see McGillen, C. D., 1962).
- Miyamoto, S., "A Geological Interpretation of the Lunar Surface", *Planetary and Space Science*, V. 2, 1960, p. 256-260.
- Moore, H. J., (see Gault, D. E., 1962).

Murray, B. C., (see Pohn, H., 1962).

Nasmyth, J., and Carpenter, J., "The Moon, Considered as a Planet, a World, and a Satellite", John Murray, London, 1874.

Neison, E., "The Moon and the Condition and Configurations of its Surface", Longmans, Green and Company, London, 1876.

O'Keefe, J. A., and Cameron, W. T., "Nature of the Surface of the Moon", Nature, V. 166, 1960, p. 1026.

Opik, E. J., "The Lunar Surface as an Impact Counter", Royal Astronomical Society. Monthly Notices, V. 120, 1960, p. 404-411.

Opik, E. J., "Surface Conditions on Nearest Planets, I-The Moon", American Journal of Physics, V. 28, No. 7, 1960, p. 618.

Palm, A., and Strom, R. G., "The Craters in the Lunar Walled Plain, Ptolemaeus", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Pickering, W. H., "The Lunar Crater Plato", Harvard College Observatory, Annals, V. 32, 1900, p. 174.

Pickering, W. H., "The Origin of the Lunar Formations", Astronomical Society of the Pacific. Publications, V. 32, 1920, p. 116-125.

Pohn, H., Murray, B. C., and Brown, H., "New Applications of Lunar Shadow Studies", Astronomical Society of the Pacific. Publications, V. 74, No. 437, 1962, p. 93-105.

Poldervaart, A., (see Green, J., 1960).

Powers, W., (see Aikens, R., 1961).

Puiseux, P., "La Terre et la Lune", Paris, 1908.

Salisbury, J. W., "The Origin of Lunar Domes", Lunar and Planetary Exploration Colloquium. Proceedings, V. 2, No. 2, 1960, p. 22-26.

Salisbury, J. W., "The Origin of Lunar Domes", Astrophysical Journal, V. 134, No. 1, 1961, p. 126-131.

Schmidt, J. J., "Der Mond", Leipzig, 1856.

Schmidt, J. J., "Concerning Rills on the Moon", Leipzig, 1866.

Shaler, N. S., "Comparison of the Features of the Earth and the Moon", Smithsonian Institute Publication, Contributions to Knowledge, V. 34, 1903, p. 38.

Sheldon, T. S., "Selenographical Region S. E. of Guericke", English Mechanic, V. 53, No. 1356-1360, 1891.

Shoemaker, E. M., "Ballistics of the Copernican System", Lunar and Planetary Exploration Colloquium. Proceedings, V. 2, No. 2, 1960, p. 7-21.

Shoemaker, E. M., "Interpretation of Lunar Craters", Physics and Astronomy of the Moon, edited by Z. Kopal, Academic Press, London, 1961, p. 283-358.

Shoemaker, E. M., (see Gault, D. E., 1962).

Spurr, J. E., "The Imbrian Plain Region of the Moon", Lancaster Press, 1944.

Spurr, J. E., "Geology Applied to Selenology", Science Printing Company, Lancaster, Pennsylvania, 1945.

Stewart, J. Q., (see Hacker, S. G., 1935).

Stewart, P. E., "Surface Exploration of the Moon", Spaceflight, V. 3, Mar. 1961, p. 34-48.

Strom, R. G., (see Palm, A., 1962).

Thiersch, A., and Thiersch, H., "The Physiognomy of the Moon", Noerdlingen, 1879.

Thiersch, H., (see Thiersch, A., 1879).

Tombaugh, C., "Comparison of Lunar and Martian Features", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 4, 1959, p. 38-41.

Tomkins, H. S., "The Igneous Origin of Some of the Lunar Formations", British Astronomical Society, V. 37, 1927, p. 161-181.

Tyler, W. C., and Copeland, J., "A Theoretical Model for the Lunar Surface", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in Astronomical Journal, V. 67, No. 2, 1962, p. 109-124.

Urey, H. C., "The Origin of the Moon's Surface Features", Sky and Telescope, V. 15, No. 2, 1956.

Urey, H. C., "The Duration of Intense Bombardment Processes on the Moon", Astrophysical Journal, V. 132, 1960, p. 502.

Urey, H. C. (Chairman), "Lunar Physics and Topography", Lunar and Planetary Exploration Colloquium. Proceedings, V. 2, No. 3, 1961, p. 1-15.

Warner, B., "The Lunar Maria", Planetary and Space Science, V. 5, No. 4, 1961, p. 257-273.

Warner, B., "Accretion and Erosion on the Surface of the Moon", Planetary and Space Science, V. 5, No. 4, 1961, p. 321-325.

Wilkins, P., "The Other Side of the Moon", British Interplanetary Society. Journal, V. 12, 1953, p. 1-5.



## VIII. PLANETS

### a. GENERAL

Ambartsumian, V. A., "On the Scattering of Light by Atmospheres of the Planets", *Astronomical Journal of USSR*, V. 19, 1942.

Baker, S. C., and Kelso, J. M., "Miniature Movies of the Planets", *Astronautics*, V. 4, May 1959, p. 26-28, 104, 106.

Brandt, J. C., and Chamberlain, J. W., "Density of Neutral Gases in a Planetary Exosphere", *Physics of Fluids*, V. 3, 1960, p. 485-486.

Brewer, A. W., (see Urey, H. C., 1957).

Callahan, F. P., "Planetary Orbit Chart", *Applied Physics. Journal*, V. 30, Mar. 1959, p. 444-445.

Carr, T. D., "A Corner Reflector Array for the Reception of Planetary Radio Radiations", *British Astronomical Association. Journal*, V. 70, 1960, p. 185-190.

Chamberlain, J. W., (see Brandt, J. C., 1960).

Chamberlain, J. W., and Sobouti, Y., "Fluorescent Scattering in Planetary Atmospheres, 1. Basic Theoretical Considerations", *Astrophysical Journal*, V. 135, No. 3, 1962, p. 925-937.

Clapp, R. W., Owens, A. T., and Sax, R. L., "Planetary Landing and Observation Package", in *Propulsion, Space Science and Space Exploration, Symposium on Ballistic Missile and Aerospace Technology*, 6th, Los Angeles, V. 3, Aug. 1961, p. 341-363.

Clemence, G. M., "Planetary Distances According to General Relativity", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in *Astronomical Journal*, V. 67, No. 9, 1962, p. 571-590.

deVaucouleurs, G., "Report of Conference on Planetary Atmospheres", *American Geophysical Union. Transactions*, V. 42, 1961, p. 16.

Dollfus, A., "Polarization Studies of Planets", *The Solar System*, V. 3, Planets and Satellites, Edited by G. P. Kuiper and B. M. Middlehurst, University of Chicago Press, Chicago, 1961, p. 213-248.

Firsoff, V. A., "A Note on the Effective Greysphere Temperature and Effective Bolometric Albedo of Planetary Bodies", *British Astronomical Association. Journal*, V. 70, 1960, p. 131-134.

Goldstein, F. S., "The Infrared Reflectivity of a Planetary Atmosphere", *Astrophysical Journal*, V. 132, 1960, p. 473-481.

Greenfield, S. M. (Chairman), "Planetary Atmospheres", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 3, No. 1, 1962, p. 1 and 19-21.

- Hall, F. F., "Planetary Antisolar-Point Radiance", *Astronomical Society of the Pacific. Publications*, V. 73, 1961, p. 229-230.
- Herring, J., and Kyle, H. L., "Density in a Planetary Exosphere", NASA TN D-1042, 1961, 5 pp.
- Heuer, K., "Men of Other Planets", The Viking Press, New York, 1954, 160 pp.
- Hope-Jones, E. F., "Planetary Engineering", *British Interplanetary Society. Journal*, V. 12, Jul. 1953, p. 155-159.
- Huang, S., "The Limiting Sizes of the Habitable Planets", NASA TN D-499, Sept. 1960, 6 pp.
- Isaacs, J. D., and Tyler, J. E., "On the Observation of Unresolved Surface Features of a Planet", *Astronomical Society of the Pacific. Publications*, V. 72, 1960, p. 159-166.
- Kelso, J. M., (see Baker, S. C., 1959).
- Kooy, J. J., "Astrodynamics and Planetary Research", *Astronautica Acta*, V. 8, 1962, p. 151-173.
- Kozlovskaya, S. V., "The Internal Structure and Chemical Composition of the Major Planets", *Akademiya Nauk USSR. Doklady*, V. 108, No. 3, 1956, p. 409-412 (Russian).
- Kuiper, G. P. (Editor), "The Atmospheres of the Earth and Planets", University of Chicago Press, 1952.
- Kuiper, G. P., "The Formation of the Planets", *Royal Astronomical Society of Canada. Journal*, V. 50, 1956, p. 57-68, 105-121, and 158-176.
- Kuiper, G. P. (Chairman), "Planetary Studies", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 2, No. 3, 1961, p. 17-41.
- Kyle, H. L., (see Herring, J., 1961).
- Mintz, Y., "The General Circulation of Planetary Atmospheres", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 3, No. 1, 1962, p. 1-19.
- Opik, E. J., and Singer, S. F., "Distribution of Density in a Planetary Exosphere", *Physics of Fluids*, V. 2, 1959, p. 653-655.
- Opik, E. J., and Singer, S. F., "Distribution of Density in a Planetary Exosphere, II", *Physics of Fluids*, V. 4, No. 2, 1961, p. 221-233.
- Owens, A. T., (see Clapp, R. W., 1961).
- Porter, J. G., "The Satellites of the Planets", *British Astronomical Association. Journal*, V. 70, 1960, p. 33-59.

- Powers, A. J., "A Theory of Gravitation and Planetary Evolution", American Interplanetary Society. Bulletin, V. 2, No. 18, 1932, p. 1-6.
- Ringwood, A. E., "On the Chemical Evolution and Densities of the Planets", *Geochemica et Cosmochemica Acta*, V. 15, 1959, p. 257.
- Sax, R. L., (see Clapp, R. W., 1961).
- Singer, S. F., (see Opik, E. J., 1959).
- Singer, S. F., (see Opik, E. J., 1961).
- Smith, R. A., "Landing on Airless Planets", British Interplanetary Society. Journal, V. 12, Jul. 1953, p. 149-155.
- Sobouti, Y., (see Chamberlain, J. W., 1962).
- Sobouti, Y., "Fluorescent Scattering in Planetary Atmospheres, 2. Coupling Among Transitions", *Astrophysical Journal*, V. 135, No. 3, 1962, p. 938-954.
- Stephenson, G. B., "Minor Planets", *Spaceflight*, V. 2, Apr. 1959, p. 59-60.
- Struve, O., "Planets With Rings", *Sky and Telescope*, V. 20, 1960, p. 20-23.
- Tyler, J. E., (see Isaacs, J. D., 1960).
- Urey, H. C., "The Planets", Yale University Press, New Haven, 1952.
- Urey, H. C., and Brewer, A. W., "Fluorescence in Planetary Atmospheres", Royal Society of London, Proceedings, Series A, V. 241, 1957, p. 37-43.
- Urey, H. C., "The Atmospheres of the Planets", *Handbuch der Physik*, V. 52, Springer-Verlag, Berlin, 1959, 363 pp.
- Van de Hulst, H. C., "The Atmospheres of the Earth and Planets", Edited by G. P. Kuiper, University of Chicago Press, Chicago, 1952.
- Whipple, F. L., "Earth, Moon and Planets", Grosset and Dunlap, New York, 1958, 293 pp.

## b. JUPITER

Anonymous, "The Planets - Jupiter", Sky and Telescope, V. 21, 1961, p. 272-274.

Averill, L., (see Herrick, S., 1961).

Barrow, C. H., "Magnetic Field of Jupiter", Nature, V. 188, 1960, p. 924-925.

Barrow, C. H., "Decameter-Wave Observations of Jupiter in 1961", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in Astronomical Journal, V. 67, No. 2, 1962, p. 109-124.

Bollhagen, H., (see Smith, A. G., 1960).

Bollhagen, H., (see Carr, T. D., 1962).

Carr, T. D., (see Smith, A. G., 1960).

Carr, T. D., Smith, A. G., Higgins, C. S., Bollhagen, H., and May, J., "Statistical Spectrum of Jupiter at Decameter Wavelengths", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in Astronomical Journal, V. 67, No. 9, 1962, p. 571-590.

Chang, B. J., and Davis, L., "Synchrotron Radiation as the Source of the Polarized Decameter Radiation From Jupiter", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in Astronomical Journal, V. 67, No. 2, 1962, p. 109-124.

Chatterton, N., (see Smith, A. G., 1960).

Corliss, C. H., (see Kiess, C. C., 1960).

Davis, L., (see Chang, B. J., 1962).

Douglas, J. N., "Presence and Correlation of Fine Structures in Jovian Decametric Radiation", Nature, V. 192, No. 4804, 1961, p. 741.

Douglas, J. N., "Statistical Analysis of Jupiter's Decameter Radiation 1950-1961", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in Astronomical Journal, V. 67, No. 9, 1962.

Douglas, J. N., (see Smith, H. J., 1962).

Field, G. B., "The Source of Radiation From Jupiter at Decimeter Wavelengths. II. Cyclotron Radiation by Trapped Electrons", Journal of Geophysical Research, V. 65, 1960, p. 1661-1671.

Field, G. B., "Can the Jupiter Emission be Cyclotron Radiation?", *Astronomical Journal*, V. 66, 1961, p. 283.

Forward, R. L., "Jupiter-Probe Target After Mars", *Missiles and Rockets*, V. 9, No. 23, 1961, p. 22-23, 26.

Gehrels, T., "The Polarization of the Sunlit Sky and of the Poles of Jupiter", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in *Astronomical Journal*, V. 67, No. 5, 1962, p. 267-286.

Herrick, S., Averill, L., and Montgomery, T. D., "1961 Ephemerides of Jupiter's Ninth and Twelfth Satellites", *Astronomical Society of the Pacific. Publications*, V. 73, 1961, p. 168-169.

Higgins, C. S., (see Carr, T. D., 1962).

Kiess, C. C., Corliss, C. H., and Kiess, H. K., "High-Dispersion Spectra of Jupiter", *Astrophysical Journal*, V. 132, 1960, p. 221-231.

Kiess, H. K., (see Kiess, C. C., 1960).

May, J., (see Carr, T. D., 1962).

Montgomery, T. D., (see Herrick, S., 1961).

Munch, G., (see Spinrad, H., 1962).

Rice, F. O., "The Chemistry of Jupiter", *Scientific American*, V. 194, Jun. 1956, p. 119-120, 122, 124, 126, 128.

Roberts, M. S., "Correction of Jupiter Decimeter Radiation With Solar Activity", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in *Astronomical Journal*, V. 67, No. 5, 1962, p. 267-286.

Six, F., (see Smith, A. G., 1960).

Smith, A. G., Carr, T. D., Bollhagen, H., Chatterton, N., and Six, F., "Ionospheric Modification of the Radio Emission from Jupiter", *Nature*, V. 187, 1960, p. 568-570.

Smith, A. G., (see Carr, T. D., 1962).

Smith, H. J., and Douglas, J. N., "Fine Structure in Jovian Decameter Radio Noise", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in *Astronomical Journal*, V. 67, No. 2, 1962, p. 109-124.

Smith, H. J., "Longitude Effects in Jovian Decameteric Radio Emission", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in *Astronomical Journal*, V. 67, No. 9, 1962, p. 571-590.

Spinrad, H., Munch, G., and Trafton, L. M., "Recent Spectroscopic Investigations of Jupiter and Saturn", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in Astronomical Journal, V. 67, No. 9, 1962, p. 571-590.

Strom, K. M., (see Strom, S. E., 1962).

Strom, S. E., and Strom, K. M., "A Possible Mechanism for Jovian Decameter Bursts", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in Astronomical Journal, V. 67, No. 2, 1962, p. 109-124.

Trafton, L. M., (see Spinrad, H., 1962).

Zabriskie, F. R., "Hydrogen Content of Jupiter's Atmosphere", Astronomical Journal, V. 67, No. 3, 1962, p. 168-170.

c. MARS

Anonymous, "Martian Atmosphere Restudied", Technical News Bulletin, National Bureau of Standards, V. 42, Mar. 1958, p. 48-52.

Anonymous, "Upper Atmosphere Physics, Mars", California Institute of Technology, Jet Propulsion Laboratory, Physics Research Summary 36-7, V. 2, Mar. 1961, p. 1-4.

Arking, A., and Rasool, S. I., "Ozone Heating in the Atmosphere of Mars", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Barabashov, N. P., and Koval, I. K., "Results of Studies of Contrast on Mars", Soviet Astronomy - A. J., V. 4, 1960, p. 283-287.

Barabashov, N. P., and Garazha, V. I., "Some Remarks on the Dust and Haze Formations on Mars", Soviet Astronomy - A. J., V. 4, 1960, p. 473-479.

Briggs, M. H., and Revill, J. P., "The Chemistry of Mars, I. The Atmosphere", British Interplanetary Society. Journal, V. 17, No. 11, 1960, p. 391-393.

Briggs, M. H., and Revill, J. P., "The Chemistry of Mars, II. The Surface", British Interplanetary Society. Journal, V. 17, 1960, p. 459-461.

Briggs, M. H., "New Evidence of Martian Life", Spaceflight, V. 2, 1960, p. 237-238.

Burgess, E., and Cross, C. A., "The Martian Probe", British Interplanetary Society. Journal, V. 12, Mar. 1953, p. 72-74.

Collinson, E. H., "The Apparition of Mars 1958-1959", British Astronomical Association. Journal, V. 70, 1960, p. 252-254.

Corliss, C. H., (see Kiess, C. C., 1957).

Corliss, C. H., (see Kiess, C. C., 1962).

Corliss, E. R., (see Kiess, C. C., 1957).

Cross, C. A., (see Burgess, E., 1953).

DeVaucouleurs, G., "Physics of the Planet Mars", Astronomical Society of the Pacific. Leaflet 276, 1952.

DeVaucouleurs, G., "Physics of the Planet Mars", MacMillan, New York, 1954.

DeVaucouleurs, G., "Remarks on Mars and Venus", The Exploration of Space, Edited by R. Jastrow, MacMillan, 1960, 160 pp.

Dollfus, A., "Polarization Study of the Light Reflected by Clouds and the Atmosphere of the Planet Mars", Academie des Sciences. Comptes Rendus, V. 277, 1948, p. 383.

Dollfus, A., "The Polarization of Light From the Different Regions of the Surface of Mars and Its Interpretation", Academie des Sciences. Comptes Rendus, V. 233, 1951, p. 467.

Dollfus, A., Photometric Properties of the Desert Regions on the Planet Mars", Academie des Sciences. Comptes Rendus, V. 244, 1957, p. 162.

Firsoff, V. A., (see Heath, A. W., 1960).

French, H., "Some Notes on the Origin of the Colour of the Martian Deserts", British Astronomical Association. Journal, V. 70, 1960, p. 136-138.

Fulton, J. D., "Terrestrial Microorganisms Under Simulated Martian Conditions", Physics and Medicine of the Atmosphere and Space, Edited by O. O. Benson and H. Strughold, John Wiley and Sons, New York, 1959.

Garazha, V. I., (see Barabashov, N. P., 1960).

Gifford, F., "The Surface Temperature Climate of Mars", Astrophysical Journal, V. 123, 1956, p. 154-161.

Goody, R. M., (see Grandjean, J., 1955).

Goody, R. M., "The Atmosphere of Mars", British Interplanetary Society. Journal, V. 16, Apr.-Jun. 1957, p. 69-83.

Goody, R. M., "The Atmosphere of Mars", Weather, V. 12, 1957, p. 3-15.

Grandjean, J., and Goody, R. M., "The Concentration of Carbon Dioxide in the Atmosphere of Mars", Astrophysical Journal, V. 121, 1955, p. 548.

Gustavson, J., "The Red Planet", Jet Propulsion, V. 27, No. 6, 1957, p. 706-708.

Heath, A. W., Robinson, J. H., and Firsoff, V. A., "Mars Through Color Filters, 1958", British Astronomical Association. Journal, V. 70, 1960, p. 270-272.

Hess, S. H., "Some Aspects of the Meteorology of Mars", Journal of Meteorology, V. 7, 1950, p. 1-13.

Hess, S. H., "Blue Haze and the Vertical Structure of the Martian Atmosphere", Astrophysical Journal, V. 127, 1958, p. 743.

Kampffert, W., "A Trip to Mars", Fourm, Oct. 1930.

Karrer, S., (see Kiess, C. C., 1960).



Kiess, C. C., Corliss, C. H., Kiess, H. K., and Corliss, E. R., "High-Dispersion Spectra of Mars", *Astrophysical Journal*, V. 126, Nov. 1957, p. 579-584.

Kiess, C. C., Karrer, S., and Kiess, H. K., "A New Interpretation of Martian Phenomena", *Astronomical Society of the Pacific. Publications*, V. 72, 1960, p. 256-267.

Kiess, C. C., Corliss, C. H., and Kiess, H. K., "Evidence for Nitrogen in the Martian Atmosphere", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in *Astronomical Journal*, V. 67, No. 9, 1962, p. 571-590.

Kiess, H. K., (see Kiess, C. C., 1957).

Kiess, H. K., (see Kiess, C. C., 1960).

Kiess, H. K., (see Kiess, C. C., 1962).

Knip, G., and Zola, C. I., "Three-Dimensional Sphere-of-Influence Analysis of Interplanetary Trajectories to Mars", NASA TN D-1199, May 1962, 68 pp.

Koval, I. K., (see Barabashov, N. P., 1960).

Kuiper, G. P., "Visual Observations of Mars", *Astrophysical Journal*, V. 125, 1957, p. 307.

Kurchakov, A. V., "Optical Properties of the Atmosphere and Surface of the Planet Mars", *ARS Journal*, V. 32, No. 3, 1962, p. 490-495.

McLaughlin, D. B., "Volcanic-Aeolian Hypothesis of Martian Features", *Astronomical Society of the Pacific. Publications*, V. 68, 1956, p. 221.

Moore, P. A., "The Planet Mars", *British Interplanetary Society. Journal*, V. 14, Mar.-Apr. 1955, p. 89-97.

Nelson, E., "There Is Life on Mars", The Citadel Press, New York, 1956, 152 pp.

Opik, E. J., "The Atmosphere and Haze of Mars", *Journal of Geophysical Research*, V. 65, 1960, p. 3057-3063.

Peterson, V. L., "Motions of a Short 10 Degree Blunted Cone Entering A Martian Atmosphere at Arbitrary Angles of Attack and Arbitrary Pitching Rates", NASA TN D-1326, May 1962, 40 pp.

Randolph, J. R., "The Climate of Mars", *American Rocket Society, Journal*, V. 17, No. 70, 1947, p. 16-19.

Randolph, J. R., "The Occupation of Mars", *Army Ordnance*, Mar.-Apr. 1947.

Rasool, S. I., (see Arking, A., 1962).

Revill, J. P., (see Briggs, M. H., 1960).

- Revill, J. P., (see Briggs, M. H., 1960).
- Richardson, R. S., "Exploring Mars", McGraw-Hill, New York, 1954.
- Richardson, R. S., "Observations on Mars and Venus", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 3, 1958, p. 19-27.
- Robinson, J. H., (see Heath, A. W., 1960).
- Sagan, C., "The Abundance of Water Vapor on Mars", Astrophysical Journal, V. 66, 1961, p. 521.
- Sagan, C., "Is the Martian Blue Haze Produced by Solar Protons?", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in Astronomical Journal, V. 67, No. 2, 1962, p. 109-124.
- Schilling, G. F., "Extreme Model Atmospheres of Mars", Rand Corporation Research Memorandum, RM-2782-JPL, 1961.
- Schilling, G. F., "A Note on the Atmosphere of Mars", Journal of Geophysical Research, V. 67, No. 3, 1962, p. 1170-1172.
- Schmidt, I., "Visual Problems in Observing the Planet Mars", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 6, 1959, p. 19-22.
- Sinton, W. M., (see Strong, J., 1956).
- Sinton, W. M., "Spectroscopic Evidence for Vegetation on Mars", Astrophysical Journal, V. 126, 1957, p. 231-239.
- Sinton, W. M., "Spectroscopic Evidence of Vegetation on Mars", Astronomical Society of the Pacific. Publications, V. 70, 1958, p. 50.
- Sinton, W. M., and Strong, J., "Radiometric Observations of Mars", Astrophysical Journal, V. 131, 1960, p. 459-469.
- Spence, W. N., "On the Adequacy of ICBM Guidance Capability For a Mars Launch", ARS Preprint, 1174-60, May 1960, 20 pp.
- Strong, J., (see Sinton, W. M., 1960).
- Strong, J., and Sinton, W. M., "Radiometry of Mars and Venus", Science, V. 123, 1956, p. 676.
- Strughold, H., "Life on Mars in View of Physiological Principles", Cado Technical Data Digest, V. 16, Nov. 1951.
- Tombaugh, C. W., "Could the Satellites of Mars be Artificial?", Astronautics, V. 4, Dec. 1949, p. 38.
- Tombaugh, C. W., "Comparison of Lunar and Martian Features", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 4, 1959.

Tombaugh, C. W., "Mars - A World For Exploration", *Astronautics*, V. 4, Jan. 1959, p. 30-31, 86-93.

Tombaugh, C. W., "A Reply on Mars' Satellites", *Astronautics*, V. 4, Dec. 1959, p. 39.

Von Braun, W., "The Mars Project", University of Illinois Press, Urbana, 1954, 153 pp.

Wilson, A. G., "The Problem of Martian Blue Haze", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 4, 1959, p. 33-37.

Wooley, R. R., "Monochromatic Magnitudes of Mars in 1952", *Royal Astronomical Society, Monthly Notices*, V. 113, 1953, p. 521-525.

Yanow, G., "A Study of the Martian Upper Atmosphere and Ionosphere", *Douglas Aircraft Engineering Paper No. 974*, 1961, 37 pp.

Zola, C. I., (see Knip, G., 1962).

#### d. MERCURY

Anonymous, "Transit of Mercury, November 7, 1960", British Astronomical Association. Journal, V. 71, 1961, p. 238.

deVaucouleurs, G., "Transit of Mercury Observed at Austin, Texas", Astronomical Journal, V. 66, 1961, p. 36.

Field, G. B., "Atmosphere of Mercury", Abstract of Paper Presented at the 111th Meeting of the American Astronomical Society, Aug. 26-29, 1962, Yale University, New Haven, Connecticut, in Astronomical Journal, V. 67, No. 9, 1962, p. 571-590.

Moore, P. A., "Mercury, The Barren Planet", Journal of Astronautics, V. 2, 1955, p. 145-148.

Walker, J. G., "The Thermal Budget of the Planet Mercury", Astrophysical Journal, V. 133, Jan. 1961, p. 274-280.

e. SATURN

Anonymous, "Saturn in 1959", British Astronomical Association, Journal, V. 71, 1961, p. 105.

Anonymous, "Saturn in 1960", British Astronomical Association, V. 71, 1961, p. 375-379.

Arnold, C. B., (see Cook, J. J., 1960).

Barr, M. F., (see Cook, J. J., 1960).

Bobrov, M. S., "Theoretical Phase Curves of the Shadow Effect on Saturn's Rings. I. Derivation of Pertinent Formulas", Soviet Astronomy - A. J., V. 4, 1960, p. 288-297.

Cook, J. J., Cross, L. G., Barr, M. E., and Arnold, C. B., "Radio Detection of the Planet Saturn", Nature, V. 188, 1960, p. 393-394.

Cragg, T. A., "Rotation of Saturn", Astronomical Society of the Pacific. Publications, V. 73, No. 434, 1961, p. 318-322.

Cross, L. G., (see Cook, J. J., 1960).

f. VENUS

Anonymous, "Exploring Venus by Radar", Spaceflight, V. 3, 1961, p. 180-182.

Anonymous, "Venus-Eastern Elongation, 1959", British Astronomical Association. Journal, V. 71, 1961, p. 64-74.

Anonymous, "Venus-Western Elongation, 1959-1960", British Astronomical Association. Journal, V. 71, 1961, p. 146.

Barrett, A., "Microwave Absorption and Emission in the Atmosphere of Venus", Journal of Geophysical Research, V. 65, 1960, p. 1835-1838.

Barrett, A. H., "Microwave Absorption and Emission in the Atmosphere of Venus", Astrophysical Journal, V. 133, 1961, p. 281-293.

Barrett, A. H., Copeland, J., Jones, D. E., and Lilley, A. E., "Objectives of the Mariner Venus Microwave Radiometer Experiment", California Institute of Technology, Jet Propulsion Laboratory, TR 32-156, 1961, 27 pp.

Block, N., (see Muhleman, D. O., 1962).

Briscoe, H. W., (see Pettingill, G. H., 1962).

Cattermole, P. J., (see Moore, P. A., 1960).

Chamberlain, J. W., and Kuiper, C. P., "Rotational Temperature and Phase Variation of CO<sub>2</sub> Bands of Venus", Astrophysical Journal, V. 124, 1956, p. 399.

Copeland, J., (see Barrett, A. H., 1961).

Corbett, H. H., (see Grant, C. R., 1962).

Dollfus, A., "Photographic and Visual Study of the Atmosphere of Venus", L'Ostronomie, 1956, p. 413.

Dole, S. H., "The Venusian Atmosphere", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 5, 1959, p. 12-14.

Edson, J. B., "Measuring the Venusian Atmosphere by Russel's Method", Lunar and Planetary Exploration Colloquium. Proceedings, 1959, p. 22-30.

Evans, J. V., (see Pettingill, G. H., 1962).

Firsoff, V. A., (see Heath, A. W., 1961).

Firsoff, V. A., "The Markings of Venus", British Astronomical Association. Journal, V. 70, 1960, p. 359-360.

Gehrels, F., (see Pettingill, G. H., 1962).

Grant, C. R., and Corbett, H. H., "Observations of Venus at 4.3 mm", Abstract of Paper Presented at the 109th Meeting of the American Astronomical Society, Dec. 26-30, 1961, at Denver, Colorado, in Astronomical Journal, V. 67, No. 2, 1962, p. 109-124.

Heath, A. W., Robinson, J. H., Wykes, F. C., and Firsoff, V. A., "Filter Observations of Venus in 1959", British Astronomical Association. Journal, V. 71, 1961, p. 242.

Heath, M. B., "The Greatest Brilliancy of Venus", British Astronomical Association. Journal, V. 71, 1961, p. 28-31.

Holdridge, D. B., (see Muhleman, D. O., 1962).

Holdridge, D. B., (see Muhleman, D. O., 1962).

Houtgast, G., "Indication of a Magnetic Field of the Planet Venus", Nature, V. 175, 1955, p. 678-679.

Hyde, G. M., (see Pettingill, G. H., 1962).

Jones, D. E., (see Barrett, A. H., 1961).

Kaplan, L. D., "A New Interpretation of the Structure and CO<sub>2</sub> Content of the Venus Atmosphere", Planetary and Space Science, V. 8, Oct. 1961, p. 23-29.

Knoll, R. H., (see Smolak, G. R., 1960).

Kraft, L. G., (see Pettingill, G. H., 1962).

Kraus, J. D., "Apparent Radio Radiation at 11-M Wavelength From Venus", Nature, V. 186, 1960, p. 462.

Kuiper, G. P., "Determination of the Pole of Rotation of Venus", Astrophysical Journal, V. 120, 1954, p. 603-605.

Kuiper, G. P., (see Chamberlain, J. W., 1956).

Kuzmin, A. D., and Salomonovich, A. E., "Radio Emissions From Venus in the 8-mm Bandwidth", Soviet Astronomy - A. J., V. 4, 1960, p. 279-282.

Lilley, A. E., (see Barrett, A. H., 1961).

Mahoney, J. R., "Steady-State Atmospheric Dynamics for Venus in the Case of Slow Rotation", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Mayer, C. H., McCullough, T. P., and Sloanaker, R. M., "Temperature of Venus", Proceedings of IRE., V. 46, 1958, p. 260.

Mayer, C. H., McCullough, T. P., and Sloanaker, R. M., "Temperature of Venus", *Astrophysical Journal*, V. 127, 1958, p. 1.

McCullough, T. P., (see Mayer, C. H., 1958).

McCullough, T. P., (see Mayer, C. H., 1958).

Menzel, D. H., and Whipple, F. L., "The Case for H<sub>2</sub>O Clouds on Venus", *Astronomical Society of the Pacific. Publications*, V. 67, 1955, p. 161-168.

Moore, P. A., "Beneath the Clouds of Venus", *Astronautics*, V. 2, 1955, p. 7-8.

Moore, P. A., "The Planet Venus", Faber and Faber, Limited, 1956, 151 pp.

Moore, P. A., and Cattermole, P. J., "The Markings of Venus", *British Astronomical Association. Journal*, V. 70, 1960, p. 130.

Muhleman, D. O., Holdridge, D. B., and Block, N., "The Astronomical Unit Determined by Radar Reflections from Venus", *Astronomical Journal*, V. 67, No. 4, 1962, p. 191-202.

Muhleman, D. O., "Radar Results as Constraints on the Models of Venus", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in *Astronomical Journal*, V. 67, No. 5, 1962, p. 267-286.

Muhleman, D. O., Holdridge, D. B., and Block, N., "The Astronomical Unit Determined by Radar Reflection from Venus", *California Institute of Technology, Jet Propulsion Laboratory*, TR 32-221, 1962, 18 pp.

Neugebauer, M., "Scientific Experiments for Space Probes Near the Round Trips to Mars and Venus", *Aerospace Engineering*, V. 19, Jun. 1960, p. 42-46.

Newbauer, J. A., "Radar Contact With Venus", *Astronautics*, V. 4, May 1959, p. 50, 124.

Newkirk, G., "The Airglow of Venus", *Planet and Space Science*, V. 1, 1959, p. 32-36.

Nicholson, S. B., (see St. John, C. E., 1922).

Nicholson, S. B., (see Pettit, E., 1955).

Nikolaev, A. G., (see Vernov, S. N., 1960).

Pettingill, G. H., Briscoe, H. W., Evans, J. V., Gehrels, E., Hyde, G. M., Kraft, L. G., Price, R., and Smith, W. B., "A Radar Investigation of Venus", *Astronomical Journal*, V. 67, No. 4, 1962, p. 181-190.

Pettit, E., and Nicholson, S. B., "Temperatures on the Bright and Dark Sides of Venus", *Astronomical Society of the Pacific. Publications*, V. 67, 1955, p. 293.



Price, R., (see Pettingill, G. H., 1962).

Richardson, R. S., "Observations of Venus Made at Mount Wilson in the Winter of 1954-1955", Astronomical Society of the Pacific. Publications, V. 67, 1955, p. 304-314.

Richardson, R. S., "Spectroscopic Observations of Venus for Rotation Made at Mount Wilson in 1956", British Interplanetary Society. Journal, V. 16, Sept.-Oct. 1958, p. 517-524.

Richardson, R. S., "Spectroscopic Observations of Venus for Rotation Made at Mount Wilson in 1956", Astronomical Society of the Pacific. Publications, V. 70, 1958, p. 251.

Richardson, R. S., "Observations on Mars and Venus", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 3, 1958, p. 19-27.

Robinson, J. H., (see Heath, A. W., 1961).

Sagan, C., "The Radiation Balance of Venus", California Institute of Technology, Jet Propulsion Laboratory Technical Report 32-34, Sept. 1960, 23 pp.

Sagan, C., "The Surface Temperature of Venus", Astronomical Journal, V. 65, 1960, p. 352-353.

Sagan, C., "The Radiation Balance of Venus", California Institute of Technology, Jet Propulsion Laboratory Report No. 32-34, 1960.

Sagan, C., "The Planet Venus", Science, V. 133, 1961, p. 849-858.

Sagan, C., "Structure of the Lower Atmosphere of Venus", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in Astronomical Journal, V. 67, No. 5, 1962, p. 267-286.

Salomonovich, A. E., (see Kuzmin, A. D., 1960).

Sax, R. L., "Exploration of the Atmosphere of Venus with a Small Payload", in Propulsion, Space Science and Space Exploration (Symposium on Ballistic Missile and Aerospace Technology), 6th, Los Angeles, V. 3, Aug. 1961, p. 289-309.

Sinton, W. M., (see Strong, J., 1956).

Sinton, W. M., and Strong, J., "Radiometric Observations of Venus", Astrophysical Journal, V. 131, 1960, p. 470-490.

Sloanaker, R. M., (see Mayer, C. H., 1958).

Smith, W. B., (see Pettingill, G. H., 1962).

Spinrad, H., "Spectroscopic Temperature and Pressure Measurements in the Venus Atmosphere", Astronomical Society of the Pacific. Publications, V. 74, No. 438, 1962, p. 187-201.

Spinrad, H., "On the Continuous Spectrum of Venus and Jupiter", Astronomical Society of the Pacific. Publications, V. 74, No. 437, 1962, p. 156-158.

Smolak, G. R., and Knoll, R. H., "Cryogenic Propellant Storage for Round Trips to Mars and Venus", Aerospace Engineering, V. 19, Jun. 1960, p. 42-46.

St. John, C. E., and Nicholson, S. B., "Absence of  $O_2$  and  $H_2O$  Lines from Spectrum of Venus", Astrophysical Journal, V. 56, 1922, p. 380.

Straiton, A. W., (see Tolbert, C. W., 1962).

Straly, W. H., "Mars or Venus", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 5, 1959, p. 4-10.

Strong, J., and Sinton, W. M., "Radiometry of Mars and Venus", Science, V. 123, 1956, p. 676.

Strong, J., (see Sinton, W. M., 1960).

Tolbert, C. W., and Straiton, A. W., "A Consideration of Microwave Radiation Associated With Particles in the Atmosphere of Venus", Journal of Geophysical Research, V. 67, No. 5, 1962, p. 1741-1744.

Valukov, P. V., (see Vernov, S. N., 1960).

Vernov, S. N., Chudakov, A. E., Valukov, P. V., Logachev, Y. I., and N. Kolaev, A. G., "Radiation During the Flight of the Second Moon Rocket", Soviet Physics. Doklady, V. 5, Jul.-Aug. 1960, p. 95-99.

Warner, B., "The Emission Spectrum of the Night Side of Venus", Royal Astronomical Society. Monthly Notices, V. 121, 1960, p. 279-283.

Whipple, F. L., (see Menzel, D. H., 1955).

Wykes, F. C., (see Heath, A. W., 1961).

Wykes, F. C., "The Rotational Period and Tilt of the Planet Venus", Spaceflight, V. 2, Apr. 1959, p. 63-64.

## IX. POWER SYSTEMS

- Cooley, W. C., "A Comparison of Nuclear and Solar Power Systems for Manned Space Stations", Aerospace Engineering, V. 19, May 1960, p. 54-55, 100.
- Fischer, W. A., and Sibilia, J. A., "Batteries Challenge Hot-Gas Systems for APU Applications", Space Aeronautics, Oct. 1959.
- Fisher, J. H., and Menetrey, W. R., "Power In Space", Mechanical Engineering, V. 81, No. 11, Nov. 1959.
- Kloss, P. J., "ARPA Studies Auxiliary Space Power", Aviation Week, Jul. 1959.
- Kolcum, E. H., "Nuclear Powerplant for Moon Outlined", Aviation Week, V. 75, No. 5, Jul. 1961, p. 50-51, 53.
- Leventhal, E. L., (see MacKay, D. B., 1959).
- MacKay, D. B., and Leventhal, E. L., "Solar Turbo Power Plant Design", ASME Annual Meeting, Atlantic City, Nov. 29-Dec. 4, 1959, Paper 59-A-74.
- Menetrey, W. R., (see Fisher, J. H., 1959).
- Sibilia, J. A., (see Fischer, W. A., 1959).
- Vavilov, V. S., et al., "Solar Batteries in Sputniks", Electronic Design, Sept. 1959.
- Zarem, A. M., "Power Systems", Astronautics, V. 5, Nov. 1960, p. 43, 102, 104-106.

## X. SPACE - GENERAL

Alexander, W. M., (see Lagow, H. E., 1960).

Anders, E., "Extinct Radioactivity and the Prehistory of the Solar System", *Zeitschrift Naturforschung*, V. 16A, No. 5, 1961, p. 520-521.

Anonymous, "Space Flight - A 2-Billion-A-Year-Business by 1962", *Aviation Age*, V. 28, Dec. 1957, p. 16-21.

Anonymous, "Soviet Space Agency Revealed", *Missiles and Rockets*, V. 2, Dec. 1957, p. 42-47.

Anonymous, "U. S. Space Flight R and D Makes Good Showing At IAF Congress", *Aviation Week*, V. 28, Dec. 1957, p. 76-81.

Anonymous, "Next Decade In Space", *Special Report on NASA Programs*, *Aviation Week*, Jun. 1959, p. 119-153.

Anonymous, "What We Need To Win Aerospace Race With Russia", *Aircraft and Missiles*, V. 4, Jan. 1961, p. 35-41.

Bailey, V. A., "Apparent Steady Component of the Interplanetary Magnetic Field", *Nature*, V. 189, 1961, p. 44-45.

Barr, P. M., "New Worlds to Conquer", *Outlook*, Oct. 1930.

Berkner, I. V., and Odishaw, H. (Editors), "Science in Space", McGraw-Hill, New York, 1961, 458 pp.

Brown, R. H., and Lovell, A. B., "The Exploration of Space by Radio", John Wiley and Sons, New York, 1958, 207 pp.

Buckheim, R. W., "Utilization of Space From A National Standpoint", 1960, Preprint 230B, 3 pp.

Carter, L. J., "Realities of Space Travel", McGraw-Hill, New York, 1957.

Chamberlin, T. C., "The Two Solar Families", University of Chicago Press, Chicago, 1928.

Chew, B. B., "A Look at the Future Space Effort", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 2, 1958, p. 1-4.

Chudakov, A. E., (see Vernov, S. N., 1960).

Clarke, A. C., "The Exploration of Space", Harper and Brothers, New York, 1951, 199 pp.

Clark, E., "Man in Space Needed to Recapture Lead", *Aviation Week*, V. 67, No. 20, 1957, p. 26-27.

Cole, D. M., "Have We One Good Reason to Colonize Outer Space?", *Missiles and Rockets*, V. 8, No. 22, 1961, p. 86-88, and 90.

Coleman, P. J., Sonnett, C. P., and Leverett, D., "On the Interplanetary Magnetic Storm, Pioneer V", *Journal of Geophysical Research*, V. 66, 1961, p. 2043-2046.

Constance, A., "The Inexplicable Sky", Citadel Press, New York, 1957, 288 pp.

Cummings, C. I., "The Shape of Tomorrow", *Astronautics*, V. 5, Jul. 1960, p. 24-25, and 91.

Dufer, T. B., "A Quicker Method for the Conquest of Space, Part I", *Space Flight*, V. 8, Feb. 1956, p. 1-6.

Durant, F. C., "Space Flight Needs Only Money and Time", *Aviation Week*, V. 61, Sept. 1954, p. 46.

Firsoff, V. A., "Our Neighbour Worlds", Philosophical Library, New York, 1953, 336 pp.

Friedman, H., "Physics of the Atmosphere and Space", *Astronautics*, V. 5, Nov. 1960, p. 42, 128, 130, and 132.

Garwin, R. L., "Solar Sailing - A Practical Method of Propulsion Within the Solar System", *Jet Propulsion*, V. 28, No. 3, 1958, p. 188-190.

Gatland, K. W., and Kunesch, A. M., "Space Travel", Philosophical Library, New York, 1953, 205 pp.

Gilruth, R. R., and Strass, H. K., "Manned Space Flight - Present and Future Steps", *Aerospace Engineering*, V. 19, May 1960, p. 16-17, and 88.

Glennan, T. K., "The NASA Space Program", *Astronautics*, Jul. 1959, p. 36.

Green, J., and Wolfle, D., "Gea, Daughter of Chaos", *Science*, V. 131, 1960, p. 1071.

Green, P. E., and Petengill, G. H., "Exploration of the Solar System by Radar", *Sky and Telescope*, V. 20, 1960, p. 9-14.

Greenfield, S. M. (Chairman), "Recapitulation and Appraisal", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 2, No. 1, 1959, p. 49-57.

Greenstadt, E. W., "Magnetic Storms in Interplanetary Space As Observed by Pioneer V", *Nature*, V. 191, 1961, p. 329-331.

Greenwood, S. W., "Solar Sailing - Practical Problems", *Jet Propulsion*, V. 28, No. 11, 1958, p. 765.

Greenwood, S. W., "Probing Interplanetary Space", *Royal Aeronautical Society. Journal*, V. 64, May 1960, p. 299-381.

Greenwood, S. W., "The Future Pattern of Space Exploration", *Aeronautics*, V. 42, Sept. 1960, p. 80-83.

Haddock, F. I., "Radio Astronomy Observations From Space", *American Rocket Society Meeting*, San Diego, Jun. 1959.

Haneman, V. S., and Van Der Wal, L., "On Target For Tomorrow - The Explorer Scout Space Science Exposition", *Astronautics*, V. 5, Jul. 1960, p. 53, 68, 69.

Herring, J. R., and Light, A. L., "The Solar Wind", *NASA TN D-487*, Sept. 1960, 14 pp.

Hibbs, A. R., "The National Program for Lunar and Planetary Exploration", *Journal of Geophysical Research*, V. 66, Jul. 1961, p. 2003-2012.

Hohemann, W., "The Attainability of Heavenly Bodies", *NASA TT F-44*, 1960, 104 pp.

Huber, H., (see Von Braun, W., 1952).

Jennison, R. C., "The Radio Exploration of Space", *British Interplanetary Society. Journal*, V. 14, Nov.-Dec. 1955, p. 307-314.

Kaplan, J., (see Von Braun, W., 1952).

Kaprielyan, S. P., "NASA's goals for Next Decade", *Aircraft and Missiles*, V. 4, Jan. 1961, p. 43-49.

Koelle, H. H., "Long-Range Planning for Space Transportation Systems", *NASA TN D-597*, Jan. 1961, 36 pp.

Krieger, F. J., "Soviet Space Experiments and Astronautics", *Aerospace Engineering*, Jul. 1961, p. 28-37.

Kunesch, A. M., (see Gatland, K. W., 1953).

Lagow, H. E., and Alexander, W. M., "Space Research", *North-Holland Publishing Company*, Amsterdam, 1960.

Larmore, L. (Chairman), "Solar Phenomena", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 3, No. 1, 1962, p. 23 and 38-41.

Lasser, D., "By Rocket to the Planets", *Nature*, Nov. 1931.

Lawton, R. W., "Effects of G Variation During Space Flight", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 6, 1959, p. 23-31.

Leverett, D., (see Coleman, P. J., 1961).

Ley, W., (see Von Braun, W., 1960).

Licht, A. L., (see Herring, J. R., 1960).

Logachev, Y. I., (see Vernov, S. N., 1960)

Lovell, A. B., (see Brown, R. H., 1958).

Lovell, A. B., "The Exploration of Outer Space", Spaceflight, V. 11, No. 7, Jul. 1960, p. 194-203.

Lyttleton, R. A., "Dynamical Calculations Relating to the Origin of the Solar System", Royal Astronomical Society. Monthly Notices, V. 121, 1960, p. 551-570.

Mayo, A. M., "Environment Considerations of Space Travel From the Engineering Viewpoint", Interavia, V. 11, Jun. 1956, p. 435-438.

Mikhaylova, Z. M., (see Zatrutina, R. F., 1960).

Mrazek, W. A., "The Saturn Project", Astronautics, V. 5, Jul. 1960, p. 26-27, 74, 76.

Naugle, J. E., (see Newell, H. E., 1960).

Naugle, J. E., "Space Environment. Section IV. Space Radiation Levels", Nucleonics, V. 19, Apr. 1961, p. 89-91.

Newell, H. E., and Naugle, J. E., "Results of Satellites and Space Probe Observations of Radiation Environment", SAE-AFOSR, Astronautic Symposium, Los Angeles, California, Oct. 12-14, 1960, Preprint 230P, 9 pp.

Nikolaev, A. G., (see Vernov, S. N., 1960).

Odishaw, H., (see Berkner, L. V., 1961).

Ordway, F. I. (Editor), "Advances in Space Science and Technology", V. 3, Academic Press, New York, 1961, 482 pp.

Otto, J., "Space Visitors", Space Flight. Journal, V. 6, Feb. 1954, p. 4-7.

Parker, E. N., "What Do We Really Know About Conditions in Interplanetary Space?", SAE Journal, V. 68, Nov. 1960, p. 26-28.

Parker, E. N., "The Solar Wind", Journal of Research, V. 65D, No. 6, 1961, p. 537-542.

Pettengill, G. H., (see Green, P. E., 1960).

Pratt, F., "The Universal Background of Interplanetary Travel", Summary of Paper Read Before the American Rocket Society on May 2, 1930, in American Interplanetary Society. Bulletin, V. 1, No. 1, 1930, p. 2.

Rechtin, F., "Who Says There's A Space Race?", Engineering and Science, V. 23, No. 3, 1959, p. 15-18.

Rechtin, F., "What Are We Racing For?", Engineering and Science, V. 24, No. 1, 1960, p. 18-21.

Robey, D. H., "Radiation Shield Requirements For Two Large Solar Flares", Astronautica Acta, V. 6, Fasc. 4, 1960, p. 206-224.

- Rowland, F. N., "A Note on Space Travel in a Gravitational Field", British Interplanetary Society. Journal, V. 16, Oct.-Dec. 1957, p. 216-221.
- Sanger, E., "Astronautics", Aero Digest, V. 71, Dec. 1955, p. 21.
- Schachter, O., (see Von Braun, W., 1952).
- Schaefer, H. J., "Radiation Hazards in Space Exploration", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 6, 1959, p. 23-31.
- Shuf, A. I., "Military Space, Taking the High Ground", Space Trajectories, A Symposium Sponsored by the Astronautical Society, The Advanced Research Projects Agency, and Radiation, Incorporated, Orlando, Florida, Dec. 14-15, 1959, New York, Academic Press, 1960, p. 1-8.
- Shephard, L. R., "Intersellar Flight", British Interplanetary Society. Journal, V. 11, No. 4, 1952, p. 149.
- Shternfeld, A., "Soviet Space Science", Basic Books, New York, 1959.
- Silkin, B. I., (see Zatrutina, R. F., 1960).
- Skhloveskiy, I. S., "Is Communication Possible With Intelligent Beings On Other Planets?", Priroda, No. 7, 1960, p. 21-30 (Translated by NASA TT-F-8009).
- Sonnett, C. P., (see Coleman, P. J., 1961).
- Spady, A. A., "An Exploratory Investigation of Jet-Blast Effects on A Dust-Covered Surface at Low Ambient Pressure", NASA TN D-1017, 1962, 14 pp.
- Staff of the Royal Radar Establishment, "The 45-Foot Radio Telescope at the Royal Radar Establishment", Nature, V. 180, 1957, p. 1225.
- Strass, H. K., (see Gilruth, R. R., 1960).
- Valukov, P. V., (see Vernov, S. N., 1960).
- Van De Hulst, H. C., "Empty Space", Scientific American, V. 193, Nov. 1955, p. 72-80.
- Van Der Wal, L., (see Haneman, V. S., 1960).
- Vernov, S. N., Chudakov, A. E., Valukov, P. V., Logachev, Y. I., and Nikolaev, A. G., "Radiation Measurements During the Flight of the Second Moon Rocket", Soviet Physics. Doklady, V. 5, Jul.-Aug. 1960, p. 95-99.
- Von Braun, W., Kaplan, J., Huber, H., Ley, W., Schachter, O., and Whipple, F., "Across the Space Frontier", Edited by C. Rayn, The Viking Press, New York, 1952.
- Von Braun, W., "Space Travel and our Technological Revolution", Missiles and Rockets, V. 2, Jul. 1957, p. 75.



Watson, F. G., "Between the Planets", Harvard University Press, Cambridge, 1952.

Whipple, F. L., (see Von Braun, W., 1952).

Wilson, A. G., "Syntax of Space Exploration", Lunar and Planetary Colloquium. Proceedings, V. 1, No. 2, 1958, p. 16-19.

Winzen, O. C., "Bridgehead in Space", Interavia, V. 12, No. 10, 1957, p. 1040-1041.

Wolfle, D., (see Green, J., 1960).

Zaehring, A. J., "Soviet Astronautics", Missiles and Rockets, V. 2, Feb. 1957, p. 45-56.

Zatrutina, R. F., Mikhaylova, Z. M., and Silkin, B. I., "International Geophysical Year Bibliography of Literature in the Russian Language for 1958", Compiled by the Interdepartment Committee for the IGY, Academy of Sciences, USSR, (Translated by NASA-TT-F-12, May 1960, 75 pp).

Zelikoff, M., "The Threshold of Space", Pergamon Press, New York, 1956, 342 pp.

, "Space Travel A Selected List of Titles for Lecturers and Students, Special Bibliography No. 2", Army Library, Washington, Mar. 1956, 11 pp.

, "Space Handbook - Astronautics and Its Applications", Staff Report of the Select Committee on Astronautics and Space Exploration, 86th Session of U. S. Congress, 1959.

, "The Scientific Objectives of the Able - 3 Program", Space Technology Laboratory, May 1959.

, "Hearings Before the NASA Authorization Subcommittee of the Committee on Aeronautical and Space Sciences, United States Senate, Part I", Scientific and Technical Presentations, Apr. 1959.

, "Space Handbook - Astronautics and Its Implications", Compiled by Rand Corporation, U. S. Government Printing Office, 252 pp.

## XI. SPACE VEHICLES AND PROBES

Anonymous, "Earth-To-Space Ferry Designed for Astronauts", *Astronautical Sciences Review*, Oct.-Dec. 1959.

Babinsky, A., (see del Duca, M. G., 1960).

Bogema, B. L., (see Carter, J. W., 1960).

Bossart, K. J., "An Engineer Looks at Space Flight", *Electrical Engineering*, V. 79, Dec. 1960, p. 960-962.

Byers, R. A., and Kramer, S. B., "Assembly of A Multimanned Satellite", Lockheed Aircraft Corporation Report LMSD-48347.

Byers, R. A., and Kramer, S. B., "Assembly of A Multimanned Satellite", *Advances in the Astronautical Sciences*, V. 4, 1958, p. 154-169.

Byers, R. A., (see Kramer, S. B., 1959).

Byers, R. A., (see Kramer, S. B., 1959).

Byers, R. A., (see Kramer, S. B., 1960).

Carter, J. W., and Bogema, B. L., "Inflatable Manned Orbital Vehicles", *Aerospace Engineering*, May 1960.

Clark, C. C., and Hardy, J. D., "Gravity Problems in Manned Space Stations", *Aerospace Engineering*, V. 19, May 1960, p. 36-39.

Coleman, P. J., Sonett, C. P., Judge, D. L., and Smith, E. J., "Some Preliminary Results of the Pioneer V Magnetometer Experiment", *Journal of Geophysical Research*, V. 65, 1960, p. 1856-1857.

Davis, R. J., "Orbiting Optical Telescopes", American Rocket Society Meeting, San Diego, Jun. 1959.

del Duca, M. G., Babinsky, A., and Miraldi, F. D., "Integrated Thermodynamic Systems for Manned Space Stations", *Aerospace Engineering*, V. 19, May 1960, p. 56-57, 104.

Dolan, T. E., (see Lundberg, R. H., 1960).

Dorsey, J. W., (see Stolko, M., 1960).

- Doss, J. H., and Montague, L. J., "Some Factors Influencing the Selection of a Manned Space Station Concept", *Aerospace Engineering*, V. 19, May 1960, p. 28-29, 94.
- Engler, E. E., (see Koelle, H. H., 1960).
- Fielder, G., "Observations Related to the Impact of Lunik II", *Nature*, V. 185, 1960, p. 11.
- Gazley, C., "Atmospheric Entry of Manned Vehicles", *Aerospace Engineering*, V. 19, May 1960, p. 22-23, and 90.
- Grodsky, M. A., and Sorkin, R. D., "Man's Contribution to an Operational Space Station Concept", *Aerospace Engineering*, V. 19, May 1960, p. 80-81.
- Gustavson, J., "Stations in Space", *Jet Propulsion*, V. 27, No. 7, 1957, p. 812-815.
- Hardy, J. D., (see Clark, J. W., 1960).
- Hebeler, H. K., and White, R. D., "Some Design Aspects of an Interplanetary Exploration Vehicle", *Astronautical Sciences Review*, Apr.-Jun. 1959.
- Hibbs, A. R., and Snyder, C. W., "Results of Pioneer III Flight", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 4, 1959, p. 48-52.
- Hibbs, A. R., "Results of Pioneer IV Flight", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 5, 1959, p. 11.
- Howard, H. F., and Laughlin, R. M., "The Uses of Chemical Power Systems in the Construction, Servicing, and Operation of Manned Space Stations", *Aerospace Engineering*, V. 19, May 1960, p. 62-63.
- Judge, D. L., (see Coleman, P. J., 1960).
- Kayten, G. G., (see Stoiko, M., 1960).
- Koelle, H. H., Engler, E. E., and Massey, J. W., "Design Criteria and Their Application to Economical Manned Satellites", *Aerospace Engineering*, V. 19, May 1960, p. 24-25, 90.
- Konecni, E. B., "Sealed Cabin Ecology for Space Exploration", *Lunar and Planetary Exploration Colloquium. Proceedings*, V. 1, No. 6, 1959, p. 37-43.
- Konecni, E. B., and Wood, N. E., "Design of an Operational Ecological System", *Aerospace Engineering*, May 1960.
- Kramer, S. B., (see Byers, R. A., LMSD-48347).
- Kramer, S. B., (see Byers, R. A., 1958).
- Kramer, S. B., and Byers, R. A., "Ten-Man Space Station for Assembly in Orbit", *Space Aeronautics*, Jul. 1959.

Kramer, S. B., and Byers, R. A., "Manned Space Station Needs Special Ferries and Tugs", Space Aeronautics, Aug. 1959.

Kramer, S. B., and Byers, R. A., "A Modular Concept for a Multimanned Space Station", Aerospace Engineering, V. 19, May 1960, p. 30-31, 90.

Lampert, S., "Aerospace Structures Gap", Aircraft and Missiles, V. 4, Jan. 1961, p. 58-61.

Laughlin, R. M., (see Howard, H. F., 1960).

Lowry, R. H., "Selection of Personnel for Manned Space Stations", Aerospace Engineering, V. 19, May 1960, p. 32-33.

Lundberg, R. H., and Dolan, T. E., "Program Costs for a Manned Space Station", Aerospace Engineering, V. 19, May 1960, p. 83-108.

Margolis, M. A., "Economic Aspects of Developing and Orbiting a Space Station", Aerospace Engineering, V. 19, May 1960, p. 84-85.

Martin, B. D., "The Pioneer IV Lunar Probe - A Minimum-Power FM/PM System Design", California Institute of Technology, Jet Propulsion Laboratories, TR-32-215, Mar. 1962.

Massey, J. W., (see Koelle, H. H., 1960).

Miraldi, F. D., (see del Duca, M. G., 1960).

Moe, M. M., "Solar-Lunar Perturbations of Earth Satellites", ARS Journal, May 1960.

Montague, L. J., (see Doss, J. H., 1960).

Payne, F. A., "Work and Living Space Requirements for Manned Space Stations", Aerospace Engineering, V. 19, May 1960, p. 34-35.

Rense, W. A., "A Solar Observatory in Space", American Rocket Society Meeting, San Diego, Jun. 1959.

Schaefer, H. J., "Radiation Hazards in Space Exploration", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 6, 1959, p. 23-31.

Schnitzer, E., "Designing a Self-Erecting Manned Space Laboratory", Astronautics, V. 6, Jan. 1961, p. 22, 23, 56, 58, 60, and 61.

Smith, E. J., (see Coleman, P. J., 1960).

Smith, L. B., "The Military Test Space Station", Aerospace Engineering, V. 19, May 1960, p. 18-19.

Snyder, C. W., (see Hibbs, A. R., 1959).

Sonett, C. P., "Results of Pioneer I Flight", Lunar and Planetary Exploration Colloquium. Proceedings, V. 1, No. 4, 1959, p. 42-47.

Sonett, C. P., (see Coleman, P. J., 1960).

Sorkin, R. D., (see Grodsky, M. A., 1960).

Stoiko, M., Kayten, G. G., and Dorsey, J. W., "Manned Scientific Orbital Laboratory", Aerospace Engineering, V. 19, May 1960, p. 26-27, 92-93.

Stuhlinger, E., "The Flight Path of an Electrically Propelled Space Ship", Jet Propulsion, V. 27, No. 4, 1957, p. 410-414.

Van Allen, J. A. (Editor), "Scientific Uses of Earth Satellites", University of Michigan Press, Ann Arbor, 1956.

White, R. D., (see Hebeler, H. K., 1959).

Wood, N. E., (see Konecni, E. B., 1960).

## XII. TEKTITES

- Anonymous, "Metallic Meteorites Found in Tektites", *Science News Letter*, V. 79, No. 18, 1961, p. 278.
- Anonymous, "The Origin of Tektites", *British Astronomical Association. Journal*, V. 71, 1961, p. 104.
- Baker, G., "Origin of Tektites", *Nature*, V. 185, 1960, p. 291-294.
- Barnes, V. E., "Significance of Inhomogeneity in Tektites", 21st International Geological Congress Report, Pt. 13, 1960, p. 323-338.
- Barnes, V. E., "A World Wide Geological Investigation of Tektites", *Geotimes*, V. 6, No. 2, 1961, p. 8-12, 38.
- Barnes, V. E., "Tektites-Original Surfaces Preserved Beneath Flanges, Rayed Bubbles, and Reoriented Strain", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in *American Geophysical Union. Transactions*, V. 43, No. 4, Dec. 1962.
- Chapman, D. R., "Recent Re-entry Research and the Cosmic Origin of Tektites", *Nature*, V. 188, 1960, p. 353-355.
- Cherry, R. D., Taylor, S. R., and Sachs, M., "Major Element Relationships in Tektites", *Nature*, V. 187, 1960, p. 680-681.
- Cherry, R. D., and Taylor, S. R., "Studies of Tektite Composition, Derivation From a Quartz-Shale Mixture", *Geochimica et Cosmochimica Acta*, V. 22, 1961, p. 164.
- Cohen, A. J., "Trace Element Relationships and Terrestrial Origin of Tektites", *Nature*, V. 188, 1960, p. 653-654.
- Dunning, K. L., (see O'Keefe, J. A., 1962).
- Ehmann, W. D., "Nickel in Tektites by Activation Analysis", *Geochemica et Cosmochemica Acta*, V. 19, 1960, p. 149-155.
- Friedman, I., Thorpe, A., and Senfile, F. E., "Comparison of the Chemical Composition and Magnetic Properties of Tektites and Glasses Formed by Fusion of Terrestrial Rocks", *Nature*, V. 187, 1960, p. 1089-1092.
- Hawkins, G. S., "Tektites and the Earth", *Nature*, V. 185, 1960, p. 300-301.
- Hawkins, G. S., Wolfson, S. H., and Lovering, J. F., "Origin of Tektites", *Nature*, V. 186, 1960, p. 1027-1030.

LaCroix, A., "Les Tectiles Sans Formes Figurees de l'Indochine", Academy of Science. Proceedings, Paris, 1935.

Lovering, J. F., (see Hawkins, G. S., 1960).

Lowman, P. D., (see O'Keefe, J. A., 1962).

Nininger, H. H., "The Moon as a Source of Tektites", Sky and Telescope, V. 2, No. 4, 1943, p. 12-15.

Nininger, H. H., "The Moon as a Source of Tektites", Sky and Telescope, V. 2, No. 5, 1943, p. 8-9.

O'Keefe, J. A., and Shute, B., "Tektites and Natural Satellites of the Earth", IAS, 29th Annual Meeting, New York, Jan. 23-25, 1961, Paper 61-78, 13 pp.

O'Keefe, J. A., "The Origin of Tektites", NASA TN D-490, Nov. 1960, 26 pp.

O'Keefe, J. A., Dunning, K. L., and Lowman, P. D., "Neon in Tektite Bubbles", Abstract of Paper Presented at the 110th Meeting of the American Astronomical Society, Apr. 1-4, 1962, at Cambridge, Massachusetts, in Astronomical Journal, V. 67, No. 5, 1962, p. 267-286.

Olte, A., and Siegel, K. M., "Distinction Between the Electromagnetic Constants of Tektites and Libyan Desert Glass and Their Effect on Lunar Surface Theory", Astrophysical Journal, Mar. 1961, 8 pp.

Reynolds, J. H., "Rare Gases in Tektites", Geochemica et Cosmochemica Acta, V. 20, 1960, p. 101-115.

Sachs, M., (see Taylor, S. R., 1960).

Sachs, M., (see Cherry, R. D., 1960).

Senftle, F. E., (see Friedman, I., 1960).

Shute, B., (see O'Keefe, J. A., 1961).

Siegel, K. M., (see Olte, A., 1961).

Sun, M. S., "An Artificial Tektite", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Taylor, S. R., (see Cherry, R. D., 1960).

Taylor, S. R., and Sachs, M., "Trace Elements in Australites", Nature, V. 188, 1960, p. 387-388.

Taylor, S. R., "Abundance and Distribution of Alkali Elements in Australites", Geochemica et Cosmochemica Acta, V. 20, 1960, p. 85-100.

Taylor, S. R., (see Cherry, R. D., 1961).

Thorpe, A., (see Friedman, I., 1960).

Varsarsky, C. M., "Dynamical Limits on a Lunar Origin for Tektites",  
Geochemica et Cosmochemica Acta, V. 14, No. 4, 1958, p. 291-303.

Wolfson, S. H., (see Hawkins, G. S., 1960).



### XIII. VACUUM ENVIRONMENTAL SIMULATION

Anonymous, "High Vacuum Orbital Simulator at Lockheed", Test Engineer, V. 4, No. 6, 1960, p. 20.

Dushman, S., "Scientific Foundations of Vacuum Technique", 2nd Edition, John Wiley and Sons, New York, 1962, 806 pp.

Holland, I., "The Achievement and Uses of Ultra-High Vacuum", New Scientist (London), V. 10, Apr. 1961, p. 188-191.

Lewin, G., "Ultra-High Vacuum", Endeavour, V. 20, Apr. 1961, p. 85-91.

Robinson, N. W., "Modern High Vacuum Techniques", British Communications and Electronics, V. 7, Nov. 1960, p. 820-823.

Roche, R. A., "The Importance of High Vacuum in Space Environmental Simulation", Vistas in Astronautics, V. 2, 1959, p. 22-27.

Santeler, D., "Vacuum Technology", Science and Technology. International, Jan. 1963, p. 46-54.

#### XIV. SUPPLEMENTARY

Albritton, C. C., (see Boon, J. D., 1936).

Boon, J. D., and Albritton, C. C., "Meteorite Craters and Their Possible Relations to Cryptovolcanic Structures", Field and Laboratory, V. 5, 1936, p. 1-9.

Dietz, R. S., "Sudbury Structure as an Astrobleme", Abstract of Paper Presented at the Second Western National Meeting Program, Dec. 27-29, 1962, Stanford University, Stanford, California, in American Geophysical Union. Transactions, V. 43, No. 4, Dec. 1962.

Shoemaker, E. M., "Primary Structures of Marr Rims and their Bearing on the Origin of Kilbourne Hole and Zuni Salt Lake, New Mexico", Geological Society of America. Bulletin, V. 68, No. 12, Pt. 2.

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